An Address
ON
CHEMISTRY IN RELATION TO PHARMACO-THERAPEUTICS AND MATERIA MEDICA.

An authorised translation of "Die Chemie in ihrem Zusammenhange mit Pharmakotherapie und Materia Medica," delivered at the Eleventh International Medical Congress on Thursday, April 5th, 1894.

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THE TERM AND SCOPE OF PHARMACO-THERAPEUTICS.

"THERAPY" or "therapeutics," by which terms we understand the art of serving the cause of humanity by assuaging human suffering and healing human ill, avails itself of every means in its power to arrive at these ends; *elle prend son bien où elle le trouve.* And the art of therapeutics, like all of us here assembled at this Eleventh International Medical Congress, has discovered that all ways lead to Rome. To Rome therapeutics has come—now in the guise of electricity, now as a water cure, now as psychical influence; so that we here are able to review, as they defile like armies before us, electro-therapy, pneumo-therapy, hydro-therapy, hypnosis and psychic suggestion, and compare their merits as healing agents when placing themselves at our orders to combat disease and put death to flight. But most ancient of all the branches of medical art is that which makes use of drugs; and in the hands of the inexperienced drugs can cause death (*φαρμακεία*—the use of medicines or poisons), so that the science and art of the introduction of medicaments into the human body with the view of healing it carry with due right the appropriate title of "Pharmaco-therapeutics." And at one time pharmaco-therapeutics was the most important branch of the healing art, though in our days it has declined and occupies but a second, or perhaps, I should say, third place. For operative surgery, proud of its victories, and as admired as admirable, full of vigour and sap, has distanced the ancient branch. And, again, we see hygiene, young, fresh, lovely, and assured beforehand of all suffrages, taking its place in the front of all medical science, confident in the future success of its attempts to render the arts of healing superfluous by preventing the malady. Why, then, it may be asked, do I essay to interest you in an art which seems to be growing old under our eyes; whose past, it is true, is very honourable, but whose future hardly seems to promise the triumphs that have fallen to the lot of surgery and of hygiene. My reply is simple—because we shall not be able to dispense with this essential branch of our art; because, as much in external as internal medicamentation, we must for the present make use of pharmaco-therapeutics.

THE PRIME IMPORTANCE OF CHEMISTRY.

The substances that we employ in medicine are composed of chemical bodies, or are, perchance, pure chemical bodies; and to understand their physiological action we must have recourse to biology and chemistry; while to appreciate their application in disease it is necessary to study pathology and therapeutics. Chemistry, in its wide sense, enables us to understand the composition, the structure, and what I would term the affinities of a substance, as it is chemistry that enables us to analyse by tests, and to construct and reconstruct by synthesis. The relations between chemistry, on the one hand, and pharmaco-therapeutics and materia medica, on the other, are so intimate, so indissoluble, and so obvious that it almost seems to me superfluous to trouble you with their consideration. However, you will not mind, I hope, if I take the liberty of submitting to you a few points which may not be new, but which at any rate have the merit of being *apropos*, and may by thought upon them make us better appreciate chemistry. To pile stones on the top of each other is not to construct an edifice. Without a definite plan, without a general view—that is, a comprehensive conception of the whole constructive scheme—there can be no scientific edifice durably reared. Therefore, it would not be sufficient to make pharmaco-therapeutics a science to say that if it has arisen without preconceived ideas it is founded upon observations extending from the most ancient date with regard to the effects produced by the administration of certain substances to the sick; nor is it sufficient to claim that pharmaco-therapeutics has availed itself of experiments on healthy man and on animals, and has taken into consideration physiological results and the fruits of clinical study. A sound basis of operation from which to inquire into the use of medical substances is required. We must know, if we would satisfy the claims of science, the mode of action of these substances, and understand how it comes about that they possess the power to produce or remove functional troubles. And it is here that chemistry comes to our aid—chemistry in general, chemistry in its largest sense. I in no way lose sight of the incomparable services of biological chemistry and physiological experiment. Who of us would overlook the assiduous and successful work of Coppola, Gracosa, Pellacano, Albertoni, and of all that young Italian school that is now marching victoriously along the route traced out for them by Fraser and Brown? The method of action of medical substances has been and will be rendered more clear and comprehensible by their researches; but this is not enough. The conscientious striver after truth will always find himself face to face with one problem, a problem in the solution of which lie concealed—an inextricable secret so far—the true phenomena of life. We recognise this, for everywhere, where we are powerless to comprehend the action of medical substances upon the living organism as being due to their own inherent properties, we do not hesitate to call to our assistance the unknown properties of living protoplasm, and attribute the phenomena to them; but it is chemistry that should tell us that we must not be discouraged by the enigma of life. Enigma there is doubtless, but let us recall that Lavoisier first named life "a chemical function," and that—once given that the creature lives—from that point it obeys neither more nor less than dead (or material) nature the general laws of chemistry.

VITAL PHENOMENA AND THEIR MEANING.

The familiar phrases "living force" or "vital phenomena" serve us to design the outward expressions of condensed energy in dead material, being borrowed from the manifestations of life. In dead material, we are all aware, force can appear as thermal energy, as electricity, as light, or as mechanical expression, and we can go back along this line of transformations and see all the changes unmake themselves. In living protoplasm—considered as the unit of the psychic and reproductive functions—the essential phenomena are the same. There is the same change of *rôles*, the same production of warmth, electricity, mechanical energy, and chemical energy. We know that the living cell "reacts," as we please to term it, to variations of temperature, electricity, light, and energy, chemical and mechanical; but this irritability in the cell, this aptitude of the cell to change one form of energy for another, resembles the transformations that take place in dead material, as the stimulants of the living cell, without which the vital phenomena do not appear, are just the different forms of energy which arrive to it from its environment, and which it changes into chemical energy. For life the cell must have warmth and moisture. Take away the moisture or lower the temperature to the necessary point, and life becomes latent or disappears. In dead nature the same takes place. We are all familiar with the admirable experiments of Professor Pictet,[1] bearing upon this point. He proved by them beyond dispute that chemical energy disappeared and reappeared in accordance with the temperature to which certain substances were submitted, and that water is every whit as indispensable as a proper temperature for the maintenance of the phenomena of life. Certain it is that life is a chemical function, but the point is—Is not the chemical function a sort of life? Did not the father of medicine show a wonderful insight in counting water and fire among the four elements of which the universe is composed?

Now if we examine closer the special problems which fall within the scope of pharmaco-therapeutics, if we examine the results which follow the introduction of drugs—healing

[1 And more recently in England the researches of Professors Dewar and Fleming.—ED L.]

or poisonous—into the organism of man and animals, it must appear that we can never learn how to solve the problems without looking for their explanation in these "vital elements," as I may term them. The manifestations of their agency in the behaviour of the living organism have so characteristic an imprint that even Claude Bernard himself did not hesitate to place chemical and purely physical action in the comparative background. I will give examples of my meaning. How are we to understand the fact that the ingestion of infinitesimal quantities of certain substances which pass through the organism without causing in it the least change can provoke such disordered chemical actions as to occasion death? How are we to understand the fact that different parts of the organism seem to be able to distinguish these substances one from the other? We must admit special elective functions proper to the life of the cells. How are we to understand the facts that nothing but a change in the quantity of their dosage, the duration of their administration, and the method of their application suffices to make of certain toxic substances stimulants or paralysants? How are we to understand the fact that insoluble substances like arsenic, cannabis indica, and lead can defy that well-known axiom, *Corpora non agunt nisi soluta*, and manifest therapeutic and toxic action. We must admit the presence and agency of some unknown power within the living cell. How, again, are we to understand the therapeutic power exhibited by solutions of iodine and bromine which have apparently been diluted to the deprivation of all chemical action, unless we attribute to the living cell the power of liberating the iodine and the bromine from such dilute solutions? Thanks to my compatriot and dear colleague at the University of Amsterdam, Professor van t'Hoff, thanks to the admirable work of Arrhenius and of Ostwald, thanks to congresses of physicians and chemists, light seems to me to be about to be shed upon all these dark places in pharmaco-therapeutics. And it has not been Mahomet who has gone to the mountain, but the mountain which has come to him. In other words the study of the chemical affinities of dead matter has revealed to us the secrets of the living cell.

THE APPEARANCE OF VITAL PHENOMENA IN CERTAIN CHEMICAL SOLUTIONS.

We have been accustomed to regard the neutral solution of sugar or of some neutral alkaline salt in water as an inert liquid deprived of all molecular power. We know to-day that such a solution must be held to possess the same kinetic power as if the substance dissolved were present in the gaseous state. Placed in contact with other solutions it will exercise pressure according to the laws that Avagrado and Dalton have discovered for gas. It will exercise an osmotic pressure in direct proportion to its molecular weight. But this is not all. We have to remember the electrolytic phenomena of such solutions by which their kinetic power may be rendered enormous. This conception of the molecular properties of solutions is of the highest importance both in biology and in pharmaco-therapeutics. It is not by accident that life is so closely leagued, as it were, to water. It is not by accident that living organisms contain without exception more water than solid properties—that they contain much more of it in proportion than any other terrestrial object of palpable and visible formation. It is not by accident that the youngest and most energetic organisms, those in which life is the most intense, are distinguished by containing the most water, while the tissues in which life is ready to expire have the least. Life has been compared to a torch. From a chemical point of view life is not only a torch—it may also be compared to a river. It is an ocean in which the molecules of the chemical substances therein constantly dissolve, constantly develop chemical, electrical, thermal, and mechanical energy, an energy whose seat is the living cell.

From all of this it follows as an absolute necessity that the chemical actions which constitute vital phenomena become stimulated, troubled, or altogether upset from the moment that we introduce into the system some new complicated substances in solution, whose molecular forces are now added to those of the cellular system. We are only embarrassed what example to choose when we seek in organic and inorganic chemistries proof of this point. I only wish to name one to you which seems to me conclusive. By warming pure chlorate of potassium we obtain pure oxygen, but the presence of the smallest quantity of chloride of potassium is sufficient to change part of the oxygen into ozone. In giving rise to this development of ozone the chloride of potassium remains itself completely unaltered; but, what is more remarkable yet, this chloride of potassium itself has, like peroxide of manganese—which acts in an identical manner—the property of destroying ozone.

We find, then, here, as M. Brunck, to whom belongs the honour of having discovered the reactions, has said, a most remarkable phenomenon. We see a chemical substance, without itself appearing to undergo the least appreciable molecular change, favour the formation of a new chemical body, which, on the other hand, it has the power to destroy the moment that it is formed. There is, in fact, in the domain of organic chemistry, with no question of fermentation, a catalytic force, in considering which we have to make for dead nature a complete pendant of that which we should scarcely consider characteristic for therapeutic actions—the phenomena of excitement and paralysis, manifested by the slightest possible quantities of one and the same substance, which itself remains unaltered. And speaking always with these phenomena before our eyes and looking on the cell as a colloid or membranous mass containing several substances, organic and inorganic, at the same time dissolved in water, there is no longer any reason to be astonished that slight changes in the quantity of one substance or the other, or that the presence in one of a body that is absent in the other, suffice perfectly to change the chemical affinities of the cells, as well as to differentiate them in such a manner that each of them seems to be endowed with an elective affinity peculiar to itself. As for the manifestation of therapeutic and toxic action by bodies considered to be insoluble, of which Naegeli in a posthumous work has made so profound a study, they are also capable of the simplest interpretation. The insolubility of these bodies is not absolute, but only relative. If we throw, for example, metallic copper into water and wait for some days we shall find that a certain proportion of the copper has dissolved—i.e., one part to seventy-seven million parts of water. The copper dissolves in this manner without the least intervention of any living organism. In the same way it is not the vital function of the human organism which makes arsenic, cannabis indica, and lead display active properties when introduced in a metallic state into the body. It is the mass of water which is the agent (for the human body may be regarded as a jug of water containing forty-five litres) and the temperature.

The view that regards the solutions of salts as mediums in which the chemical molecules are perpetually striving to assert their individuality has contributed, on the other hand, in the most efficacious manner to elucidate the action of some of the drugs that are most in use. I have particularly in my eye now the purgative and diuretic salts, the chlorates, iodides, and bromides, whose therapeutic effects are obtained upon doses that may be called massive when comparing them with the infinitesimal doses of which we have just spoken. Since my dear and honoured colleague of the University of Amsterdam, Professor Hugo de Vries, discovered the law of isotonic solutions, and since the admirable work of Professor Hofmeister of Prague and of his pupils, the effects of purgative and diuretic salts have been recognised to depend uniquely upon their pure chemico-physical properties. On the other hand, we owe to the zeal and perseverance of Professor Hofmeister of Prague again a series of very beautiful researches on the imbibition of salt solutions by tablets of pure agar-agar gelatine, which demonstrate to proof that all that we have hitherto considered the elective affinity of the living cell can be explained in the most natural manner in the world by its colloid condition and chemical constitution. Add to this that the quickness of chemical action, according to the interesting chemical researches of Vladinarsky, is in no way impaired by the colloid state of the medium in which the substances are placed, and you will easily arrive at a conception of the immense progress that pharmo-therapeutics has made by the agency of physical chemistry. Among the salts that I have named the iodides and bromides are also to be found. Their therapeutic effects are, I need not say, altogether specific. What is more natural than the belief that we ought to attribute the results to the iodine and bromine themselves; and we all know that some long time ago my colleague at the University of Bonn, Professor Binz, was able to demonstrate that it is the living cell which frees the iodine and bromine from solution. The fact is not, however, proved to universal satisfaction.

I should never finish my task if I tried to place before you all the points of the new view on the actions of drugs, poisonous and otherwise, whose pharmaco-therapeutics are traceable to the theories of modern chemistry. Let us glance

only at the catalytic fermentative actions which take place everywhere in living protoplasm, and which without doubt play a preponderating *rôle* in the therapeutic effects of drugs. These can no longer be considered the appanage of the living cell. They also take place in dead matter.

CHEMISTRY IN RELATION TO MATERIA MEDICA.

If I now stop theorising it is not from fear lest anyone in this Areopagus of science should say: To what practical good does all this tend? Evidently it is not to-day or to-morrow that the art of medicine will profit by chemistry. But all these new ideas have rendered necessary new methods of experimentation, and new methods of investigation; and a new track is now being traced by human genius, along which there is much to discover; and from the moment that the new physical methods shall have been applied to the study of drugs (all honour to M. Dreser, who has here taken the initiative in his investigation into diuresis) medical art will profit and will find in chemistry a sure and trusty guide in its efforts to serve humanity.

In speaking of chemistry in its relation to materia medica I do not employ the words materia medica in the sense in which Dioscorides used them. I employ them in their strictest and primitive sense to mean the collection of drugs and medicaments in use in our days—our *thesaurus medicaminum*. Materia medica recruits from botany, zoology, and above all from chemistry; but its immense progress of late is due to chemistry. The active principles of almost all our drugs are now known to us. They have been isolated, prepared and elaborated; the chemical constitution of their active principles is no longer a secret. We know that sugar and glucosides and aromatic oils belong to chemical groups, and are as well defined as the alkaloids derived from pyridine or chinoline. Every day the number of contumelious substances—substances which do not wish to reveal to us their secrets—grows less. Chemistry has revealed to us the presence of more than twenty alkaloids in opium, and of more than six in quinine; and it will soon be extremely difficult to name the drug, of animal or vegetable origin, in which there have not been found one or several active principles. And, going from victory to victory, chemistry has also succeeded in producing a great number of alkaloids by the synthetic manner. These have not been the exceptionally lucky strokes (*coups de maître exceptionnels*). No, the constitution and composition of other bodies that chemistry has not yet reproduced for us are already familiar to the chemist, who can transform morphine into codeine and *vice versâ*, and worthless cupreine into effective quinine. We may predict with every confidence that the manufacture by synthesis of all the known alkaloids is only a question of time for chemistry. But the triumphal march of chemistry does not stop here: it has constructed for us new alkaloids endowed with therapeutic effects of great value; it has furnished us, *inter alia*, with apomorphine and apocodeine.

It would be unequalled ingratitude to fail to recognise the imperishable services that chemistry has rendered to materia medica in endowing it with the alkaloids and the pure active principles because there are a few black clouds on the horizon. That there are such I do not deny, but they are not wholly the fault of chemistry. Is the gunsmith responsible for the accidents that a new firearm may cause in the hands of a client who does not know how to use the weapon properly? Surely not. Why did not the purchaser take the trouble to understand the structure of the gun. Why was he not more careful? Why did he pay no attention to warnings? Why did he behave like a happy child, with nothing more important to do than to display his new acquisition to all the world and to put it to the test with the *insouciance* of youth? On the other hand, should not the gunsmith help to avoid such disasters by explaining matters to the purchaser? And if he is not himself sufficiently informed and does not thoroughly understand the mechanism of the weapon, should he have offered it for sale? Either party may be to blame. What I would convey by my parable is this: by a very pardonable illusion, to which the many physicians and some chemists have given way, it has become generally believed that the active principles of drugs, when chemistry can furnish them for us in a crystallised state, are pure chemical bodies, and that identity of name guarantees identity of chemical composition. This illusion is rapidly being dispelled, but, alas, not without having done harm to physicians and their patients. As far as the chemical purity of crystalline products is concerned, it is to-day a secret of Polichinello that crystallised quinine contains cinchonidine, that atropine contains hyoscyamine and atropamine, and that pilocarpine contains jaborandi. As much in organic as in inorganic chemistry we come across this phenomenon of mixed crystallisation. The crystallisation of substances is no guarantee of their chemical purity. These facts are sufficient to condemn entirely the new therapeutic system that M. Burggraeve has wished to inaugurate under the name of "dosimetric medicine." Dosimetric medicine is doubly on the wrong track—first, in assuming the chemical purity of active crystallised principles of which it exclusively makes use, and secondly, in enunciating the therapeutic heresy that the administration of a single active principle is worth much more than the administration of the drug from which the active principle has been derived. I do not hesitate to describe this dosimetric profession of faith as a heresy. The drugs that are most used are admirably made compositions in which different principles, working for or against each other, are found together. Their therapeutic effect on the system is altogether different from the effect that would be obtained by adding and subtracting the therapeutic effects of each ingredient. Recent pharmaceutical researches have conclusively demonstrated this fact. I do not wish to say too much against domestic medicine. I think it has been, on the whole, inoffensive. Alas! I cannot say as much of the unreasonable faith which leads persons to believe that similarity of name and of active principle in crystalline form will produce chemical and pharmaceutical identity. *Ingentem, regina, jubes renovare dolorem!* We all know the grievous results that may be caused by giving aconitine or digitalin derived from different sources. Here again the progress of chemistry promises improvement. The animal organism is most sensitive to stimulus, and modern chemistry has so many methods of stimulus at its disposal that the task will not be too arduous. It is a question which interests all civilised countries, which is brought forward at all medical and pharmaceutical international congresses, and which is in most urgent need of a satisfactory solution.

THE VAGARIES OF MODERN PHARMACY.

The services rendered by chemistry to therapeutics is not an exhausted subject. Certainly our predecessors already possessed a goodly medicinal treasury, but it seems very insignificant when compared with what we now utilise. Chemistry has loaded materia medica and pharmacology with wealth; it is the mother of new remedies, and we are proud of its aid; it has given us our anæsthetics, antiseptics, hypnotics, and antipyretics. These groups of remedies enable us to give relief in many cases where our forefathers were quite helpless. To them chloroform, ether, carbolic acid, iodoform, creosote, chloral, the salicylates, and antipyrin were all alike unknown. But here, again, and more so than with respect to the alkaloids, there are shadows in the picture. Chemists and chemical manufacturers add more and more to our store of remedies day by day without stint or truce, without heeding the despairing cries of physicians already overstocked with drugs. We are tempted to cry out for mercy. This is no exaggeration, for these new chemical products are all forced upon the same therapeutic market under the most attractive names, and all proclaimed aloud with the noise of most perfect advertising machinery. This is now done to an extent that, in my opinion, is detrimental to the interests of therapeutics. I am not speaking of quack remedies, the orvietana of our day, of those secret specifics which the medical man views with wholesome horror, to which, and to whose use, the old adage, *Trompeurs, Trompés, Trompettes*, can be so well applied. I am speaking of genuine well-known products; for, unfortunately, modern industrial chemistry, in manufacturing and in placing at the disposal of medical men these drugs, does not at all object to their being purchased by the general public. If this be not so, why do their proprietors select for their names the fascinating names that act as veritable flags to attract the public—for instance, anti-nervine, anti-phthisine, anti-rheumatine, anti-dysenterine, and, most expressive of all, migrainine. I fully appreciate the difficulty of finding new names for these new products, and can understand that the manufacturer would shrink from giving them the names derived from their chemical composition, for these, generally speaking, could only be pronounced with linguistic gymnastics and intolerable strain upon our memory. I must, with great regret, note that we have departed from the ancient method, which taught us to denominate new products according to their origin, and have followed freely a course of seeking for euphonious, sonorous names, proclaiming the therapeutic use and effect of the drugs designated by

them. It is not sufficient nowadays to have a good remedy—say agathine; we must be assured of its superlative excellence, hence aristol. Do you want to prescribe for a patient who is "out of sorts," you have euphorine; for a lack of appetite, you have orexine. You desire to procure sleep for him: you have hypnal, hypnon, somnal, or somniferine. You wish to lower a febrile temperature: do not let the emergency trouble you, for you have antipyrin, antifebrine, antithermine, thermomine, thermofugine, pyrodine, and thermodine. You want to assuage pain? *Eh bien*, you have awaiting your orders analgesine, analgeine, exalgine, exodyne, and neurodyne. Or you have to deal with a case of heart disease: you have cardine. Or you desire to stimulate urinary secretion: you have diuretine, phedueretine, and uropheine. To check the formation of pus there is a remedy termed pyoktanine; and to combat spasms antispasmine. I do not wish to exhaust your patience, and I will spare you the enumeration of the antiseptics, the disinfectants, the microbidines *e tutti quanto*. Ten years exactly have elapsed since my honoured colleague Professor Rossbach of Jena published an article full of wit and sound sense on these tendencies of modern therapeutics, and in those days we had not the long lists of antiseptic and antipyretic remedies. Nor was it then imagined that the essential extracts of the organs of animals, of which the late Professor Brown-Séquard and M. C. Paul were the earliest to explain the therapeutic value, would find a place in materia medica, nor cultures of microbes. It was not foreseen that we should have to chronicle in 1894 the sale not only of séquardine, but also of veritable bacterial products such as tuberculine, tuberculocidine, antituberculine, antitoxine, *κ.τ λ.* How shall we check the fury of this flood? There seems no reason why it should come to an end.

Technical chemistry will continue, by analogical arguments from the structure of well-known bodies, to construct by synthesis new substances. These will be submitted to our judgment in the hope that they will prove more usesul than our preparations in present employ. Bacteriology and all the experimental sciences will continue to search for toxines and antitoxines corresponding with each infectious disease and all characteristic lesions of each organ. This is the duty of the chemist and bacteriologist; but we, on whom fall the responsibilities involved in our art, must not be content to modestly lower our eyelids and say with Tartuffe—

> "*Par de pareils objets les âmes sont allêchés,*
> *Et cela fait venir des coupables pensées.*"

We must adopt a frank attitude and openly oppose such of these novelties as we do not approve of or understand.

THE OVER-HASTY PROFESSOR.

The reason of the present situation—or imbroglio—is obvious. By the side of the chemist stands the busy practitioner, or the over-wrought professor. Both are oppressed by the sense of the insufficiency of their art; neither has the time to observe, reason, and conclude. It is the professor who publishes with railroad haste his observations and impressions, for he is ever haunted by the fear lest another should precede him in the new discovery. He it is who makes others follow, sheep-like, in the wake. He constitutes himself a bustling *impresario*, always on the look-out for a new sensation, agitating himself and the public, and, finding that he has before him a fickle, unquiet, impatient audience, he hastens to deal with new subjects, if not every day, at least every week. During the year 1893 sixty-eight new chemical products have been recommended to me, this figure not being inclusive of entirely new drugs or their active principles. In each case we are told that the new product is of the very first importance, of exceptional therapeutic value, and perfectly harmless. *Fistula dulce canit volucres dum decipit aucep*s. The wise man will not be taken in. He will be guided by therapeutic teaching such as that of the immortal Baglivi, the author of the pregnant phrase, "Ars tota in observatione," or by the teaching of my honoured friend Professor Semmola, delivered with all his *maestria Italianni* from his chair in the University of Naples, a university which has lately set a glorious example to Europe by proclaiming that a drug that is efficacious cannot be harmless. Nearly all new remedies have their period of success, be it but for an hour, and this is due to "suggestions" either by medical men or patients; but, with few exceptions, these panaceas are doomed to be laid aside as forgotten and antique curiosities.

THE USES OF FEDERATION.

The century in which we live is an epoch of national and international leagues. Is it not time that the physicians and chemists and, for that matter, public functionaries of the world form an international association against the abuse of new remedies? Yet as leagues are apt to do more talking than practical work, let us decide to act. Medicine, the healing art, is an applied science, and we are anthropotechnicians. It is our duty to apply all accomplished progress in natural sciences to the profit of suffering humanity, and to seek in such progress a better basis of operation or a new supply of weapons. But it is also our imperative duty to be severe towards ourselves, and never to abandon the true path, traced for us by observations and experience extending over centuries of trial. Let us, my colleagues, never forget that our master, the master of us all, the great Hippocrates, while warning us that the opportunity quickly slips by, and that life is short, taught us first of all that ART IS LONG. Do not let us be too hasty. Let us follow with respect to new therapeutic methods and new remedies the example of one of the greatest benefactors of humanity—the immortal Jenner—who patiently waited ten years before he published his discovery, deeming that it was impossible to scrutinise too carefully or control and test too fully his results, and seeing that it was only by repeating his observations and experiments that he would be able to discern the false from the possible, the possible from the probable, and the probable from the TRUTH. But all old advice is not good. Do not heed old Celsus when he says: *In ancipite morbo plus valet anceps remedium quam nullum*, for we can never foretell the intensity and extent of the reparatory forces of the diseased organisms, and we can never be too chary in introducing remedies in doubtful cases, lest we check the activity of the organs in the exercise of the defensive powers with which they have been so liberally endowed by nature; and if we do employ remedies, let us employ those that are well known; those that have been tested in every way, on the purity of which we can rely; those whose action and special characteristics have been rendered brightly manifest by the experience of many years. We must not be bigoted advocates of ancient remedies or stubborn opponents of new remedies. We must continue to study, to examine, to observe, and to strive in every way to render firmer the foundation of therapeutic science.

Arris and Gale Lectures

ON

THE PHYSIOLOGY OF LYMPH FORMATION.

Delivered before the Royal College of Surgeons on Feb. 9th, 1894,

BY E. H. STARLING, M.D., M.R.C.P. LOND.,

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LECTURE III.

Influence of the Nervous System on Lymph Formation.

MR. PRESIDENT AND GENTLEMEN,—Several attempts have been made to show that the nervous system may influence the formation of lymph apart from its action on the blood-vessels. Thus, many years ago, Ostroumoff drew attention to the fact that, after stimulating the lingual nerve on the side for some time with gradually increasing stimulus, a marked œdema of the tongue was produced on the side on which the nerve was stimulated. The increased flow of lymph in the tongue on stimulating the lingual nerve was demonstrated by Rogowicz in other ways. Heidenhain, investigating the phenomena known as pseudo-motor, ascribes the motor effects of stimulating the lingual nerve to the secretion of lymph that is thereby produced, and does not regard it as an insuperable objection to this explanation that the pseudo-motor effects can be obtained even after the death of the animal, when there is no longer any circulation. The well-known phenomenon denoted as Ranvier's œdema has also been cited in favour of the nervous origin of dropsy, and we have many clinical cases which are supposed to put the nervous origin of œdema under certain conditions beyond doubt. I have investigated the influence of the nervous system on the flow from the thoracic duct, and compared the

effect produced on the lymph flow in the various cases with the simultaneous effect produced on the circulation, in order to find whether the nervous system can control lymph production apart from its action on the circulation.

Section of the cord.—On division of the cord in the cervical region the lymph flow from the thoracic duct is diminished to about half its previous amount. This result is invariable if certain precautions to have the mechanical conditions the same before and after section of the cord be observed. To this end it is advisable to start artificial respiration at the beginning of the experiment, so that the pumping effect of the respiratory movements may remain unaltered by section of the cord. We must now see whether the changes in the abdominal circulation produced by section of the cord are adequate to explain the diminution in lymph production. In one experiment in which the pressures were registered simultaneously in the portal vein, inferior vena cava, and femoral artery, the pressures before section of the cord were: femoral artery, 125 mm. Hg; portal vein, 100 mm. $MgSO_4$ sol.; vena cava, 60 mm. $MgSO_4$. After section of the cord they fell to: femoral artery, 60 mm.; portal vein, 75 mm.; vena cava, 50 mm. We see that there is a general fall of pressure, so that the pressures in the capillaries of intestines and liver must be also diminished, especially as other experiments have shown that the velocity of the blood flow is likewise diminished after section of the cord. Here then the lymph production varies directly as the intra-capillary pressure in the abdominal viscera.

Stimulation of the splanchnics.—In these experiments both splanchnics were dissected out from behind and put on Ludwig's electrodes. Ten minute periods of rest alternated with periods in which the splanchnics were strongly stimulated three or four times for a length of one minute. In all cases a slight increase in the lymph flow was observed during the ten minutes in which the splanchnics were stimulated. The average increase was about 50 per cent. One might say that here we had an instance in which the lymph flow was increased, while the capillary pressure was diminished, since there is general constriction of the intestinal vessels with blanching of the intestines during stimulation. On investigating, however, the condition of the circulation during excitation of these nerves, we find that there is a simultaneous rise of pressure in the femoral artery, portal vein, and inferior vena cava. Moreover, directly stimulation is discontinued, there is a great rise in the portal vein manometer before the arterial pressure has yet returned to normal. As Bayliss and I have shown, it is very probable that there is a slight rise of pressure in the intestinal capillaries during stimulation, and there is certainly a rise of pressure both in intestinal and liver capillaries immediately following stimulation. Here, then, there is, on the whole, a rise of pressure in the capillaries of the abdominal organs associated with the increased lymph flow.

Action of the vagus.—Two years ago Professor Heidenhain informed me that he had observed an increased flow of lymph on stimulation of the vagus, although stimulation was without effect on the lymph flow if atropine had been previously administered. I was at that time inclined to look upon the action of atropine as specific on the endothelial cells, analogous to its action on the salivary glands. Control experiments showed me that atropine was without effect on the results obtained after injecting lymphagogues of the first or second class. As a matter of fact, atropine annuls the effect of the vagus on lymph flow, because it annuls its action on the heart and circulation. Under normal circumstances stimulation of the vagus causes an increased lymph flow, the lymph being doubled in quantity; on the other hand, if both splanchnics be previously cut or the spinal cord divided, stimulation of the vagus has very little or no effect on the lymph flow. The cause of the different effects of stimulation of the vagus in these two cases is at once cleared up on investigating the conditions of the circulation during the stimulation. In a normal animal, on exciting the vagus, the heart stops. There is a fall of pressure in the arteries, a slight fall in the portal vein, and a rise in the vena cava. The pressures all over the body become approximately equal. After the stoppage has endured for from twenty to forty seconds, the vaso-motor centres are excited by the absence of a fresh supply of oxygenated blood, and there is an asphyxial contraction of all the arterioles of the body. The effect of this is to diminish the total capacity of the vascular system, and therefore to send up its mean pressure, the pressure in the vena cava and portal vein rising to double their former amount under these conditions; there is thus an increased pressure in the liver capillaries. When the heart recommences to beat on cessation of the excitation, the splanchnic arterioles seem to dilate before the branches of the portal vein and the liver, so that, directly after recommencement of the heart-beat, the pressure in the portal vein reaches its highest point, while the arterial pressure has attained a height that is normal or supernormal. Hence there must be also a rise of pressure in the intestinal capillaries. We have, therefore, as the effect of stimulation of the vagus, a rise of pressure in the hepatic capillaries during stimulation, and a rise of pressure in the intestinal capillaries immediately following stimulation; so that here, again, there is complete parallelism between capillary pressure and lymph production. If, however, both splanchnic nerves or the spinal cord be divided before stimulating the vagus, cessation of the heart's beat can give rise to no asphyxial constriction of the visceral vessels, since all connexion between these and the vaso-motor centre is severed. On exciting the vagus under these conditions there is a slight rise of pressure in the vena cava and a slight fall in the portal vein, with a considerable fall in all the arteries; hence there is a great fall of pressure in the intestinal capillaries, while the pressure in the hepatic capillaries is probably very little affected. The total effect on the lymph-flow from the thoracic duct is to lessen it slightly or leave it unaltered. Atropine prevents the action of the vagus on lymph production because it paralyses the cardiac inhibitory fibres, so that stimulation of the vagus can no longer effect any change in the condition of the blood pressure in the abdomen. In the abdominal viscera, then, the nervous system can only control lymph production by altering the pressure in the visceral capillaries. There is no evidence of a direct influence by the nervous system on lymph production. When we come to examine the other cases in which a direct nervous influence has been assumed, we find that here, too, the influence is an indirect one. In the much-quoted experiment of Ostroumoff stimulation of the lingual nerve causes a marked hyperæmia of the tongue, and this may be the determining factor in the increased lymph production. I think, moreover, that the extent of the œdema produced by lingual excitation has been much exaggerated. In five separate experiments I stimulated the lingual nerve in dogs on one side with gradually increasing strength of currents. In no case was anything observed which might be spoken of as marked œdema, although invariably the tongue on the stimulated side was very slightly more swollen than on the other side, and on cutting into it I could discern a difference in the amount of moisture in the two sides; but that this difference was only slight is shown by the fact that independent observers to whom I showed the cut surface could not tell me on which side the nerve had been stimulated. Only in one case did I obtain a marked œdema, and here I had produced hydræmic plethora by an intra-venous injection of 500 cc. normal saline after preliminary ligature of the renal vessels on both sides. I think that perhaps Ostroumoff may have been dealing with sick and hydræmic dogs, especially since Jankowski has shown that in such dogs œdema can be produced by a simple section of vaso-constrictor nerves. And when we study the work that has been done on the influence of nerves upon the lymph production in the limbs, we see that here, too, the slight changes that were evoked were accompanied by corresponding vascular changes. I am inclined, therefore, to conclude that the nervous system has no direct influence on lymph production and can only affect it by altering the circulatory conditions.

The Mode of Action of Lymphagogues.

I have shown that, so far, two factors—blood-pressure and permeability of capillary wall—are sufficient to explain the variations in flow and composition of lymph that occur under various conditions, and we have seen that there is no need to assume that the endothelial cells are endowed with a mystic secretory activity. Heidenhain's most important arguments, however, for regarding lymph as a secretion are afforded by the results of injecting the bodies which he calls lymphagogues. It is the action of these bodies that we must now consider. My researches on the subject are not yet complete, so that I am not able to explain all the facts to which Heidenhain has drawn attention. We shall see, however, that many of them have not the significance ascribed to them by this observer. I will first take the bodies included in the second class of lymphagogues, and of these we may take sugar as a type. On injection of a large amount of sugar (30 or 40 grammes) into

the circulation there is an enormous increase in the lymph flow from the thoracic duct. The arterial pressure is practically unaltered, and both blood and lymph become more watery. Heidenhain concludes from the constancy of the arterial pressure that the increased lymph flow cannot be due to a process of filtration. As I showed before, such a conclusion is too hasty; we must first investigate the condition of the pressures in the capillaries of the abdominal organs. One might, from facts observed long ago, predict that the capillary pressures in these organs would be largely raised. Von Brasol showed that, after injections of large quantities of sugar, the blood became more watery by the extraction of water from the tissues, so that the relative amount of hæmoglobin in the blood might sink to one-half or one-third of its previous amount. Now this sinking of the relative amount of hæmoglobin is equivalent to saying that the total volume of circulating blood is increased to twice or three times its normal amount. Animals after the injection of large quantities of sugar are, in fact, in a condition of hydræmic plethora. Observations by Bayliss and myself, mentioned in the last lecture, have shown that in hydræmic plethora the capillary pressures all over the body, and especially in the abdominal viscera, are enormously increased, and I have recently found that exactly the same rise is produced by the injection of strong solutions of sugar or salt. Here, then, the increased lymph production is accompanied by increased capillary pressure. One finds, moreover, that the lymph flow, as well as the venous pressures, increase gradually during the first ten minutes after injection, whereas, if the increased flow of lymph were a direct consequence of the stimulating effect of sugar or salt on the endothelial cells, one would expect it to be at its height immediately after the injection, when the strongest solution of sugar or salt is in contact with the cells.

That the increased lymph flow is really caused by the rise of capillary pressure can be easily proved. A 5·4 per cent. solution of dextrose is approximately isotonic with the blood. When a strong solution of sugar is injected into the blood it will tend to attract water from the tissues until it is diluted to this extent. We may say, roughly, that 6 grammes of sugar will attract 100 c.c. of water from the tissues. In some experiments I bled a dog weighing 10 kilos. to 350 c.c. and then injected a solution of 25 grammes of dextrose in 25 c.c. water. I calculated that 21 grammes of dextrose would attract fluid from the tissues until the whole volume of the added fluid was 350 c.c., so that the amount of fluid after the injection would be the same as after the bleeding. The results turned out entirely in accordance with my anticipation. After the bleeding there was a general fall of pressure in the arteries, portal vein, and vena cava. Ten minutes after the injection of the sugar the blood pressure in all three manometers had returned exactly to its previous amount. Now, in this case there was a much larger percentage of sugar in the blood than if the same amount of sugar had been injected into a normal animal, and yet under these conditions there is practically no increase in the lymph-flow from the thoracic duct. Thus in one experiment, in which 2·5 grammes dextrose per kilo. were injected in a normal animal, the lymph rose from 3 c.c. in ten minutes to 10 c.c. in two minutes (nearly twenty-fold). In another experiment, in which before the injection 350 c.c. blood had been withdrawn, the lymph-flow only rose from 4 c.c. in ten minutes to 6 c.c. in ten minutes, an increase which is negligeable.

We see then that the lymph-flow provoked by the injection of bodies belonging to the second class of lymphagogues is proportional to and conditioned by the rise of pressure caused in the capillaries by the injection. It is easy now to explain the fact to which Heidenhain drew attention—i.e., that the lymphagogue effect of the various members of this class is proportional to their osmotic equivalent, for the greater the osmotic equivalent of a substance the more water will it abstract from the tissues and the greater will be the hydræmic plethora produced.

My experiments are not yet sufficiently far advanced to decide whether the same two factors—pressure and permeability—will explain the effects of injection of the first class of lymphagogues. One fact, however, I have ascertained which is of considerable importance. Heidenhain, observing that, after the injection of leech extract, the lymph becomes more concentrated and the blood plasma more watery, came to the conclusion that a fluid more concentrated than the blood plasma had been turned out of the bloodvessels, and that, therefore, in the formation of the lymph a secretory activity of the endothelial cells must be involved. In the last lecture I showed that the same phenomena occurring after obstruction of the inferior vena cava might be explained in a much simpler manner. The same thing holds good for the first class of lymphagogues. The whole of the increased flow caused by the injection of these bodies is derived from the liver.[1] The solids in the lymph are increased because we are here dealing with the liver lymph and not with ordinary intestinal lymph. The plasma becomes more watery because it is losing a concentrated lymph in the permeable capillaries of the liver and taking up a more dilute lymph from the connective tissue spaces in all other parts of the body. Many of these bodies cause a fall of arterial pressure with a rise of pressure in the inferior vena cava and portal vein, so that the pressure in the hepatic capillaries is increased. I have not yet ascertained whether this rise of pressure in the hepatic capillaries is sufficient in all cases to explain the increased production of lymph in the liver. It may be that all these bodies, which profoundly affect the coagulability of the blood, also alter the capillary walls and increase their permeability in definite regions of the body. This point I hope to decide later.

Thus, of all Heidenhain's arguments in favour of the secretory hypothesis of lymph formation, the large majority have been shown to be groundless. A fuller investigation of Heidenhain's own experiments has only resulted in establishing for the first time on a firm experimental basis the truth of Ludwig's views on lymph production, and especially the one fact that lymph production is a function of the capillary pressure. Two facts, however, still remain to be accounted for: the first, observed by Heidenhain, that after injection of sugar or salt the percentage amount of these bodies in the lymph rises higher than that in the blood plasma; and the second one, observed by myself, that after the injection of peptone the amount of it in the lymph also rises higher than in the plasma. These facts will have to be explained before we can accept definitely the mechanical theory of lymph formation or exclude the endothelial cells of the capillaries from taking an active part in the process—that is to say, a part involving an expenditure of energy; for such, I take it, is the conception involved in the modern equivalent of "vital force" known as secretory activity.

[1] I have so far only definitely ascertained this for two substances—viz., peptone and decoction of mussels.

CREAMERIES AND INFECTIOUS DISEASES.

BY J. J. WELPLY, M.D. Q.U.I.

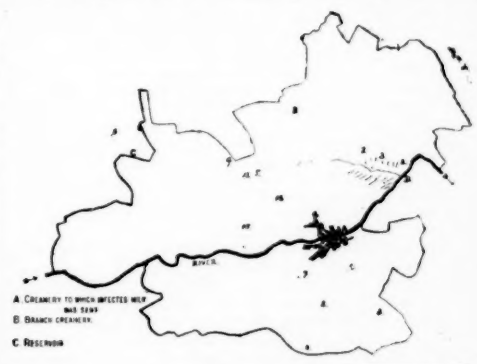
SOME enthusiasts look forward with more or less confidence to a time when all preventable disease shall have disappeared from among us. We are told that, with a more intimate and correct knowledge of the natural history and causation of infectious diseases, going hand-in-hand with improved sanitary science, such maladies as cholera, small-pox, typhoid fever, &c., will merely exist in name. This, I believe, is but "one of those dreams that breathe a blind hope into us—a hope born only of our longings and destined to die of our experience"—for our knowledge will never be perfect, and our mode of applying it will always be inadequate. Moreover, modern civilised life, with its new industries, improved modes of manufacture, and increased inducements and facilities for travelling, favours immensely the spread of some infectious diseases and often changes what would formerly have been only isolated cases into widespread and death-dealing epidemics. In a purely agricultural district one would not expect to find fresh dangers called into existence by this spirit of change and improvement, for a rural population is proverbially tenacious of its old methods and ways; but of late years dairy-farming has been partly revolutionised by the adoption of creameries or butter factories, to which a number of farmers send their milk. The milk of all is there mixed together, the cream is removed, and some of the mixed skim-milk—known as separated milk—is then sent back to the farms. The common danger becomes evident as soon as attention is thus pointedly drawn to the fact that here there is a group of dairies placed in intimate relation with each other: the milk going out from one goes to all and

bears with it any impurity that it may have acquired at its original source. Instinctively, one thinks of the many diseases that may thus be scattered widely over a district, and pre-eminently of cholera, typhoid fever, scarlet fever, and diphtheria, epidemics of which have frequently been caused by infected milk; but such speculations may be said to be purely imaginary, without a practical example, and the power of supplying that proof is my reason for writing this article. I must preface my account by the statement that I did not, for two reasons, in any way anticipate the result of my inquiries. Firstly, I had never previously known of a creamery spreading infectious disease, nor had I seen a case reported or heard a note of warning given as to the probability or possibility of such a danger. Secondly, I was not aware that separated milk was used in the district as an article of diet. On the opening of the local creamery I was told by many that so great was the aversion to separated milk that even the very poor would not drink it. Consequently, when the question confronted me I approached it with an unbiased mind, I held no preconceived ideas on the subject, and prejudice had nothing to do with the conclusions at which I arrived.

On Aug. 7th, 1893, I saw two girls (L——, at Farm No. 2) who were suffering from typhoid fever. The sanitary arrangements of the house were satisfactory, and the water was apparently good. There had been a case of fever, however, imported to Farm No. 1, which was half a mile distant, and, as a small stream flowed from near this to Farm No. 2, contamination of the water by sewage was thought of, but on examination found to be impossible. On the next day (Aug. 8th) I visited two brothers (M——, at Farm No. 3), who were ill with typhoid fever. All these persons were living on adjoining farms, but pollution of the drinking-water was out of the question, and each house had its supply from a different well. As I did not give a thought to the occupants of the dairy farm getting milk from an adjoining one, I considered it most probable that the disease was contracted directly by taking food in the house of the first patient, but of this I have no evidence. On the same day I attended a child at Farm No. 4, about six miles distant, with a river lying between, so that a water-supply poisoned from the same source was now completely out of the question, and the possibility of there being any connexion between the milk of farms so far from each other did not occur to me at the time. I then considered it probable that these families had obtained food from some establishment in the town in which there was fever, but again I failed to ascertain that such a cause existed. On the following day, Aug. 19th, I visited T. M——, living at Farm No. 5. This house was situated at a distance from any of the previous dwellings and even on a different watershed. I found that T. M—— was in the habit of driving a milk-car to and from the creamery, and on inquiring I learned that the family used the separated milk. This seemed to be the clue that I was seeking for, and all that was now needed was to discover whether milk had been sent to the creamery from infected farms, and, if so, whether the other patients had used the separated milk. Milk was so sent from Farm No. 1, where the first case occurred. J. D——, twenty-two years of age, living on this farm, spent four weeks in a city at a distance a short time previous to his attack. I am informed that he showed signs of typhoid fever on the twelfth day after his return home, and as there had been no case of that disease in the district since a date previous to Jan. 1st, 1893, and none on the farm on which he lived as far back as memory could be trusted, it is evident that he contracted the disease elsewhere, and this supposition is raised above the region of conjecture by the fact that at least two other persons who were staying in the same place in the city also developed typhoid fever about this date. The patients at Farm No. 2 had taken the separated milk freely, and when I now attributed their attack to it their father ridiculed the thought, "as he had used more of it than anyone in the house," but in about a week he also was laid up, while his wife, who never drank it, escaped. The brothers M——, from Farm No. 3, drove cars to the factory and had taken the milk. I could not yet say whether the farmer at No. 4 dealt with the creamery; so I called on Aug. 20th and learned that he sent his milk there and that the boy who was ill liked the separated milk and had used it largely. On my arrival I found a second child sick who had used the same milk. On this day I also attended W——, who drove a milk-car from Farm No. 6, and two cases in a labourer's family, No. 7, all of whom drank milk from the creamery. There could no longer be any reasonable doubt as to the means by which the infection was distributed, though it was only the fourth day since the disease assumed the form of an epidemic, and I now stopped the supply of milk from the infected dairies and spoke to the proprietors of the creamery, who promised to assist me.

On Aug. 22nd I saw Master L——, Farm No. 8. He drove a milk-car to and from the creamery and each morning gave some milk to a house already mentioned, No. 7. In No. 8 the milk was used freely, and there were five cases of fever during this and the following month. On the same day I had three cases in the town, but of the town cases I will speak more minutely afterwards. On Aug. 24th I visited K. L—— (No. 9). These people lived on Farm No. 10, whence the milk was sent to a branch creamery at B——; the supply of the latter (B——) had never become implicated, but the L——s obtained their milk from Farm No. 5, where fever had already been introduced from Creamery A; and in this instance, therefore, the infection was carried indirectly.

I need not follow the cases step by step any further, as the accompanying sketch shows the principal points I have



alluded to. The further progress of the epidemic was carefully watched by me, and the almost perfect correspondence that existed between the area of milk distribution from the creamery and the extent of the fever must have been more than accidental and is an irrefragable proof of the correctness of my conclusions. Of the farms in my district which did not deal with Creamery A—about 180 in number—on only two did typhoid fever appear, and the persons who suffered on these had taken food in one of the houses already referred to, so that they were indirectly affected from the common source; while, on the other hand, of the much smaller number—about twenty-four—that had dealings with the butter factory, twelve suffered, and from one of these a labourer's house had the infection conveyed to it.[1] This house (No. 9) was surrounded by farms not sending milk to Creamery A, and from these fever was absent. Farm No. 5 dealt with this creamery and suffered. The dwelling-house on it was separated by little more than the road from the residence on the adjoining farm (No. 13), which sent milk to B, and this family escaped. In situation, &c., these houses are identical; they only differed in the creameries to which they sent their milk. I know of no house in my district where cleanliness is so evident as in No. 14, but the boy who drove the milk-cart there and drank the separated milk suffered from fever. Farm 15 had one case; it dealt with Creamery A; the farms surrounding it did not do so, and they went free. In short, outside of the limited area dealing with Butter Factory A, there was not, as far as I know, a case of typhoid fever; while within that area all the farms not dealing with it escaped, except two, and to these the infection was indirectly conveyed. Twelve farms escaped the epidemic, though they got separated milk from Creamery A, but on some of these the milk was not used without boiling, and on others it was given only to young cattle and pigs.

I now turn to the town. Here the question was much more complex than in the country, and I doubt whether I could have satisfactorily solved it without the light the latter threw upon it. As the whole town was supplied by water

[1] These figures do not include farms situated outside of the district which sent milk to Creamery A.

from a common source, the possibility of pollution presented itself at once. Again, sewers and drains, if defective, would be much more powerful for evil in urban than in rural districts; and, finally, the tracing of disease to contaminated milk would have been most difficult had I not had the guide above alluded to, for the areas supplied from different dairies intersected each other, and there was no sharp line of demarcation between them. Fortunately the question of impure water was quickly eliminated. The supply is brought from Reservoir C through pipes for a distance of about six miles, and typhoid fever did not exist near the source. Seventeen of the first eighteen cases I saw were in the country, and this water was not used by them, nor could the stream from the farms where the epidemic broke out possibly have polluted the reservoir or the supply from it. This stream joins the river at D, so that even the river was not contaminated above the town. Moreover, Farms 1, 2, and 3 are on a different watershed from all the other infected houses and farms. There was nothing in the sanitary state to account for the spread of the disease, and the cases were not confined to the most unhealthy parts, but were scattered through several streets, some of them the healthiest in X. On turning my attention to the milk I found that the town was supplied from about thirty different dairies, and I discovered that in three of these typhoid fever had broken out; two of the latter got separated milk from Creamery A, and the third was one of the farms already alluded to as having become infected indirectly. Of the twenty-three cases which occurred in the town nineteen used separated milk, and only four remain to be accounted for in other ways. All these four had milk from one or other of the infected dairies, and two or three of them were also freely exposed to infection in the houses of fever patients, both by taking food and otherwise. These facts show how comparatively easy it was to check the spreading of the disease by single dairies, as compared with a mixed supply coming from several farms. Undoubtedly there must have been other cases in the town of which I am ignorant; for instance, a young woman employed at Creamery A died on Oct. 1st from typhoid fever, and though she was sick for five weeks I did not know the nature of her illness until I procured a certified copy of the entry of her death from the registrar. Adding the rural patients to those just mentioned, I find that, in all, sixty-one cases of typhoid fever were seen, every one of which was capable of being easily traced back to the imported one. Fifty-two contracted the disease directly through the creamery, and the remaining nine indirectly by means of food or milk from dairies which became infected secondarily. On Sept. 11th Dr. Brown of the Local Government Board visited the district, and after an exhaustive and painstaking investigation fully concurred in my view. In his inspection he took none of my statements for granted, but thoroughly sifted the data for himself, and I have to thank him for the great assistance he rendered me.

With such a multiplicity of facts all pointing steadily in one direction it is incomprehensible that efforts should have been made to upset the theory of milk-carried infection, though no objection of any weight was brought against it. There never has been clearer proof of the connexion between the use of contaminated milk and the widespread occurrence of typhoid fever. No unprejudiced person can read the series of cases and mistrust the correctness of my contention, yet it met with opposition, as though I had some ulterior and less worthy object in view than merely to discover the truth and learn the lessons it had to teach me. This opposition was devoid of anything deserving the name of argument, from the very original idea of those who believed that even if the milk contained germs "the machinery of the creamery would destroy them" to the more specious theory that the spread of the disease was due to the washing of organisms into the drinking-water by rain following long drought. This well-known means of typhoid fever propagation could not account for the X epidemic, nor did those who endeavoured to apply it here attempt to explain the immunity from disease of the farms and houses where pure milk only was used. The point on which most stress seemed to have been placed was the non-detection of typhoid germs in the separated milk. Nothing could have more forcibly shown the ignorance of the public on such matters than the demand for this evidence. Epidemics of typhoid fever due to polluted milk have been abundantly recorded, but not in a single instance has the specific virus been detected in the infecting milk, nor can this statement create surprise when we remember that Dr. (now Sir George) Buchanan demonstrated that the Caterham outbreak was caused by water which contained less than one grain of excremental matter to the gallon, and he "brought forward considerations tending to prove that an amount of specifically polluting matter so infinitesimal in quantity as to be altogether beyond detection by chemical analysis was fully potent for mischief." If "the chemist can only tell us of impurity and hazard, but not of purity and safety" in the case of such a liquid as water, it is evident that no one can justly expect him to be more accurate and exact in the examination of an organic product like milk, or more authoritative in his assurances of its purity, while to require absolute demonstration of the germs in the milk of Creamery A was to demand a test which has never been complied with elsewhere. Many years have not elapsed since it was first clearly proved that water is the chief means by which typhoid fever is spread, and the historical case of New Boston is often alluded to as one that could not possibly be accounted for in any other way. The X epidemic of 1893 demonstrates with equal certainty that the milk of a creamery can play the same *rôle*, and it has so many points in common with the New Boston case that I adapt Dr. Austin Flint's remarks on the latter, but little alteration being necessary.

Were it proposed to devise an experiment to test the communicability of a disease by contaminated milk sent through a creamery, no better plan could be adopted than to introduce a case into a dairy in a district where it was not at the time prevailing, to send the milk thus exposed to pollution to a creamery, and to procure free use of the separated milk on the part of some of those residing in the district; and to render the experiment as perfect as possible it should be made without the knowledge of those who were to be the subjects. If under all these circumstances a large proportion of those of the inhabitants of the district who had partaken of the separated milk were attacked simultaneously or in quick succession, and thus an affection be suddenly developed which spreads rapidly over a limited circuit, affecting those only who had been in the habit of using the separated milk, others residing in the same district, but not using it, uniformly escaping, what is the logical deduction from the facts? In the absence of all evidence of other epidemic or endemic agencies, contagion carried by the milk offers the only adequate explanation. The laws of the probabilities would not authorise the supposition that the events depended on mere coincidence. To undertake such an experiment would be neither practicable nor justifiable; but it will be seen, on reviewing the facts connected with the development and diffusion of typhoid fever at X, that they embrace all the conditions for a fair experiment to test the communicability of the disease by contaminated milk sent through a creamery. If every circumstance had been deliberately selected and arranged they could hardly have been more complete.

It is not on account of its mere local interest that I have gone so minutely into this case, nor is it for a similar reason that I have argued at length on the correctness of my views; in fact, local interest in the case may be said in a certain sense to have ceased, as the outbreak has been checked for some time, and there is not now, as far as I know, a case of fever on any of the farms from which the creamery receives milk, therefore the separated milk sent out from it is pure. However, what has happened here may happen wherever the cooperative system of dairy-farming is in use, and there the lessons of this visitation should be made known. In 1858 Dr. M. Taylor first pointed out that milk was a probable agent in the dissemination of typhoid fever, and the well-known outbreak at Islington in 1870 was traced by Dr. Ballard to milk contaminated with impure water. Several other outbreaks connected with individual dairies have been reported since, but I cannot find, even in our most recent works on hygiene, any allusion to the possibility of a group of dairies themselves becoming infected through the medium of a creamery, and thus indefinitely increasing the number of active foci of disease in a district. The concentration of public attention on that peril and the proof of its occurrence are the first and principal objects of this paper. The next is to discover the mode of entrance of the virus into the milk, for our knowledge is useful in proportion to the power it gives us of preventing further epidemics, and that power depends upon the correctness of our views on the manner in which the milk becomes contaminated. It is said that this generally occurs in one of three ways: (1) from typhoid effluvia being

absorbed by the milk, (2) by adulteration of the milk with impure water containing the microbe, and (3) by the use of similarly befouled water in washing out the milk vessels; to these I add another—namely, (4) the milking of the cows by a person whose hands have been soiled with typhoid dejecta &c.

1. The power that milk possesses of absorbing gases and finely divided particles is well known, and on that account careful and observant dairymaids do not allow tobacco smoking in the dairy, as the milk and butter become tainted thereby. Similarly we can understand how the absorption of typhoid effluvia from the leaky sewers containing the specific poison can take place, and an outbreak at Leeds has been thus accounted for. That the contagium may easily get into milk allowed to stand for some time in such an atmosphere is evident, but even if it be correct to assume that the power of absorbing such fumes as those of tobacco is an indication or measure of the capacity of taking up microbes of disease, still the chance of contamination in this manner of milk intended for creameries must be very slight, as it is put directly from the milking vessels into churns and sent at once to the factory. In the cases I investigated I altogether excluded this mode of contamination, as none of the milk was allowed to stand in the vessels for any time before its transmission to the creamery, nor could I find the most slender proof that the air of any of the dairies was vitiated.

2. More "milk epidemics" have been traced to adulteration with foul water than to any other cause, but there is no reason for suspecting that the X outbreak originated in that way. The proprietor of the dairy on which the first case occurred is above suspicion, and the employees could derive no benefit from the adulteration of the milk. The water-supply also was originally pure, and from its position in relation to the house in which the patient lay its subsequent fouling was impossible. Furthermore, I believe that with the creamery system as a whole there is less chance of pollution in this manner, it being understood that the milk is tested daily, and payment made according to its quality; such addition is therefore more liable to detection.

3. The washing out of the vessels with impure water has been credited with spreading the disease in numerous instances, but here again I failed to get any evidence that such was used. Moreover, vessels of a dairy are supposed to be well scoured, and then rinsed with boiling water. As the latter process was not omitted on Farm No. 1, or on any of the farms subsequently attacked, "the use of foul water in washing out the milk vessels" can scarcely account in this instance for the entrance of the typhoid poison into the milk. Practically we know that by boiling suspected water we destroy the power of conveying the contagium of typhoid fever, and Dr. Klein has also proved that the Eberth-Gaffky bacillus never survives a temperature of 140° F. for five minutes. Therefore the teaching both of experience and of science indicates that this cannot be a usual source of milk contamination, and with the absence of any suspicion of the water having been foul even before boiling necessitates the search for another mode in our local epidemic.

4. The conclusions I arrived at, after questioning the milkers and examining the surroundings of each dairy from which infection was carried, was that the contagium got into the milk from the hands of the dairymaids. The first patient suffered from paraplegia for twelve months before he was attacked by typhoid fever, and on that account required a more than usual amount of care and attention, which was sedulously rendered to him by his sister, one of the milkers on the farm. Consequently everything favoured this almost direct conveyance of the infection from patient to milk, and on several of the dairies subsequently visited I found the dairymaids acting in the dual capacity of milkers and nurses; in fact, I saw sufficient to convince me that if the infection once got on the hands it had every opportunity of eventually reaching the milk. This mode of contamination is recognised as probable in scarlet fever, but writers are silent on the possibility of its happening with typhoid virus. If the hands never touched the milk, or only did so by accident, the chance of fouling would still exist, though in a slight degree; but I learn that most cows cannot be thoroughly milked unless the hand and teat are kept moist, and that from some cows it is almost impossible to draw even a small quantity with the dry hand. The majority of dairymaids, therefore, moisten their fingers and the cows' teats with the first milk that is drawn, and this process is repeated from time to time. As the *materies morbi* may get on the hand from the patient, or the cows may be milked by a person in the commencement of the disease or by one suffering from a slight attack, the danger of milk infection is evident. With a perfectly clean hand the milker does no more than what she intends and sees—she wets the finger and teat; but with a soiled hand it ceases to be mere wetting, and it becomes a literal washing in milk, and one may as well expect to send out such milk without disease following as to wash the hands in drinking water with no ill result. The typhoid bacillus measures about the ten-thousandth part of an inch, and Dr. Klein has demonstrated that it is capable of doubling its numbers in thirty minutes. A streak of these, therefore, on the finger, a quarter of an inch in length and of microscopical width, will contain about 2500 germs, and if they find their way into the milk they will number about 40,000 at the end of two hours—quite sufficient to spread disease broadcast through all the dairies round any butter factory. Before the microscope supplied us with this definite information practical observers had satisfied themselves that once the typhoid poison gained access to milk it increased there with wonderful rapidity.

Dr. Allen of Pietermaritzburg, Mr. W. H. Power, and others believe that they have seen typhoid fever transmitted to man by the milk of cows suffering from a similar malady; but this means of infection I can also exclude, as Mr. Henderson, veterinary surgeon, examined the cattle, and found them free from either general disease or local affection of the udders and teats. Without doubt many epidemics of typhoid fever were due to impure milk before Dr. M. Taylor in 1858 proved the connexion between them, and I concluded that creameries must have been active agents in the dissemination of that disease previously to the outbreak I have reported. On inquiry, the occurrence in different parts of the country of at least three epidemics that can be similarly accounted for has come to my knowledge. A medical friend satisfied himself that a butter factory near the houses of some of his patients helped to spread typhoid fever in its neighbourhood; he formed this opinion before my report on the X epidemic appeared in August, 1893, but he did not publish it. In another district the public themselves noticed that the malady shadowed the creamery car, and some farmers ceased their supply to the factory; here, also, the local medical practitioner endorsed the opinion of the public. In a third district, a rural one not boasting of even a small town, 120 cases of typhoid fever were seen before the medical man, who is my informant, visited the place and proved the creamery to be at fault. All these were noticed since July last, consequently there have been four well-authenticated outbreaks of typhoid fever during the autumn of 1893 caused by creameries many miles from each other and investigated by independent observers, each of whom knew nothing at the time of the conclusions come to by the others, while letters that have reached me from elsewhere clearly show that these were not the only examples of the spread of disease by the same agency.[2] The mischief may not end with the recovery or death of the last case. The power that typhoid germs possess of thriving and multiplying in the soil for months, and even years, is well known, the disease reappearing about a particular locality as regularly as autumn comes round. It is not probable that all the microbes near these stricken farms have been destroyed; some of them will live and proliferate in the earth, and may sooner or later be washed into the drinking water. These places, therefore, are possible centres of common danger for the future, and any cases of illness occurring in them should be isolated and closely watched from the first.

What I have proved to have taken place with typhoid fever is possible with all infectious diseases that can be conveyed by milk, such as scarlet fever, diphtheria, cholera, &c. At the present time the latter malady deserves more than passing mention, as it is said that our preparedness or unpreparedness against the inroads of that pestilence can be correctly gauged by the absence or prevalence of typhoid fever, so closely do the two diseases resemble each other in their mode of propagation, and any system that will facilitate the spread of the one will also favour the other. It is appalling, therefore, to think of the ravages that may follow the appearance of one case of cholera in a badly managed dairy sending its milk to a creamery. A whole country side would be simultaneously smitten, and that

[2] Since the above was written I have learned of two more epidemics which were due to separated milk; the medical man who traced one contracted the disease and died.

irrespectively of the water-supply and in spite of sanitary precautions.

From what has been said it is evident that the great preventive of these evils is perfect and unremitting cleanliness, and with the creamery system this is much more easily accomplished in a given dairy than is the case with the old system of storing the milk. With the latter, however, individual cleanliness assured individual protection; but such is not the case with coöperative dairy farming, for here the helplessness of mere individual cleanliness is the one great cause of common danger. If of fifty farms sending milk to a creamery forty-nine are models of good management and only one is negligent of hygienic rules, all the forty-nine may at any time suffer for the shortcomings of the one. The latter represents the weak link in a chain, for with this inter-dependence of dairies the omission of one to perform its duty means the failure of the whole. If each could be relied on to see that his houses, vessels, &c. be kept scrupulously clean, that the milkers never touch a cow until the hands be thoroughly washed with soap and hot water, and the cow's teats and udders cleansed, then all may feel the same security as when no milk appeared in the yard except what came from their own cows. To do this is nothing more than plain duty, and its performance would bring safety and success as its rewards; but we know that duties, small or great, are not, and never will be, universally performed, and when their non-performance is dangerous to the public safety it becomes necessary for the State to step in and protect its subjects, and I know of no case where such interposition would interfere less with individual liberty—while affording protection to all it would scarcely lessen the freedom of any.

I would be diffident in speaking of the means of accomplishing this were it not that they are to be easily found in the rules of the well-regulated creameries of Denmark. The remedy for the danger that I have exposed consists in the appointment of competent inspectors, who shall regularly and frequently inspect all dairies sending their milk to creameries. The throwing the duty over to the sanitary sub-officer, or the appointment of men on the lowest salaries possible, will merely close our eyes to a danger which is not removed. The work must be done thoroughly by men who command the confidence of the public, and who can insist on compliance with their orders. When I say that I can give no better appellation for one holding this office than that of "sanitary policeman," I express in a word my idea of the union of executive authority with technical knowledge sufficient for the post. I understand that there are dairy inspectors in some unions, but it is optional with a board of guardians to appoint them or not, so that the evil is not touched in this way. Wherever a creamery exists there a sanitary policeman should secure the proper management of the dairies. The objection of expense will undoubtedly be advanced, but as one sanitary policeman could inspect several creamery districts this would not press heavily on the individual, and such inspection should be also extended to dairies supplying the public directly with milk. The recent report of the Dublin sanitary committee shows the need of the latter, as it was proved that several outbreaks of typhoid fever in Dublin were due to infected milk. Sir Charles Cameron had traced sixty-three cases of typhoid fever to a milk-supply, and Dr. Thornley Stoker stated that the Dublin dairy yards were disgraceful, and though frequent complaints were made to the sanitary authority he had failed to get some of the yards removed from unsuitable places. From whatever source the payment of these inspectors may come—creamery proprietors or public rate payers—they should be free from all interested local authority, whether represented by the owners of butter factories, on the one hand, or dairy farmers, on the other. Important as such inspection is, it would be useless unless accompanied by compulsory notification of disease, rigidly enforced and quickly and severely punished when not complied with. This is one of the lessons the late outbreak taught me most clearly. It was not unusual for me to pay my first visit to a patient suffering from typhoid fever in the second or even the third week of the malady, and nothing but compulsory notification of all illness occurring on a farm supplying a creamery with milk can prevent continued contamination of the latter.

State intervention is necessarily slow, and in the interval the managers of butter factories and dairy farmers can do much to safeguard themselves and the public, and now that attention has been directed to the special dangers associated with creameries medical men practising in districts near them should be alive to the rapidity with which infectious disease may be spread by their agency, and in addition to the usual precautions they should, on the appearance of zymotic disease on a dairy connected with a creamery, make the fact known, so that farmers who desire to do so could stop their supply and thus ensure their own safety; and if the disease spread to other dairies the creamery should be temporarily closed. At all times it would be wise to boil separated milk when used as an article of human diet.

The stringent rules which govern the continental dairies can be seen in "Reports on Dairy Farming in Denmark, Sweden, and Germany," which is issued by the Board of Agriculture. A few of these rules I quote:—

"If an infectious disease breaks out in the family, or among the stock of a member, the member must immediately cease to deliver milk at the dairy until the disease has disappeared and his farm has been properly disinfected. In the event of sickness among the staff of the dairy the dairyman shall have the sick person removed immediately, and the dairy must be disinfected. Any infringement of this clause shall be punished by a fine up to £5."

"It shall be the duty and right of the directorate and of the dairyman, whenever they think fit, to visit the members' farms and to inspect the sheds, fodder lofts, and troughs, fields, milking sheds, &c., and the members must give them all necessary help and information. If it is afterwards found that a member has concealed anything or given false information he shall be fined from 2*s.* 3*d.* to 11*s.* per cow, and make good any loss or damage he may have occasioned."

"The chairman of the dairy and the dairyman can at any time prohibit the use of any fodder considered unsatisfactory. Any member who infringes such a prohibition shall be fined from 2*s.* 3*d.* to 11*s.* per cow, and pay for any damage or loss he may have occasioned as estimated by the chairman, accountant, and dairyman."

Cleanliness of all vessels is also insisted on, and negligence in that direction is met with severe punishment.

As might have been expected, the dairy industry of these countries is not injured by these regulations, but on the contrary the butter sent from them is so highly valued that "within the last ten years the receipts of Danish butter in the ports of this country (England) have risen nearly threefold, or from 304,722 cwt. to 876,211 cwt., and those from Sweden in a still greater ratio, or from 67,821 cwt. to 234,987 cwt."

During the epidemic I did not meet with a case of fever that was caused by the butter. My remarks apply only to the milk, and if they will direct public opinion sufficiently strongly to this important subject my task will not have been in vain, but it will, I hope, help to advance us a step towards that ideal alluded to in the opening of this paper.

ON A CASE OF HIGH-LYING PYOSALPINX CONCEALED BY RETROVERSION OF THE UTERUS.[1]

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THE following case was diagnosed and treated as simple backward displacement of the uterus by a practitioner of great experience and ability. Dangerous symptoms rapidly developed and prompt operation was needed to save the patient's life. The case is fairly typical of a small group clinically well known, yet very imperfectly understood. A patient suffering from pelvic pain is examined and found to have a retroflexion or retroversion of the uterus; no other cause for pain is found. The uterus is replaced and a pessary is inserted to keep it in position. The patient returns home, but no improvement follows; the pain increases, and more or less suddenly the case assumes a graver aspect. Abdominal tenderness and tension, nausea, and perhaps bilious vomiting, with facial expression of anxiety, combine to show that peritoneal irritation of some severity is present. Still but little or nothing beyond the displacement can be detected on examination. The graver symptoms increase, and in a few days the practitioner finds himself *hors de combat* with a case of decided peritonitis, which may, and perhaps does, prove fatal. How can such disaster arise? I venture

[1] This paper was read before the Midland Medical Society on Feb. 21st, 1894.

to think that the following case may explain much that is otherwise mysterious.

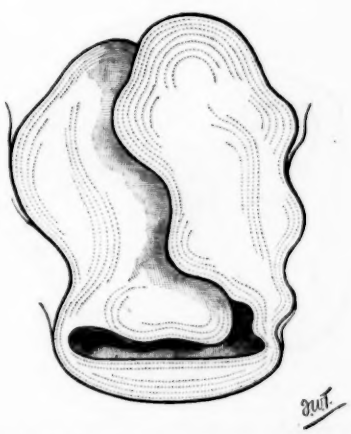
A woman aged twenty-six, a cook in a public restaurant, had been married eighteen months, and had menstruated regularly since her marriage. On Oct. 25th, 1893, she was suddenly seized with acute abdominal pain when lifting a heavy pot or saucepan from the kitchen range. She stated that she felt something "go" in her right side, and the pain following this was so severe that she could not walk. On the following day she was taken to see a medical practitioner, who examined her, and, finding that she had backward displacement of the uterus, concluded that this was the cause of her symptoms. He replaced the uterus and applied wool tampons in the posterior cul-de-sac to keep the uterus in position. At a later visit the tampons were removed and a small Hodge's pessary was inserted. The patient, however, became worse; pain in the abdomen increased, and as it appeared to be aggravated by the instrument she removed it. On Nov. 26th vomiting set in and continued throughout the day, and as the patient was unable to leave her bed a local practitioner was sent for, who referred her to me. I saw the patient on Nov. 29th. She had been sleepless owing to pain for some days, and had a facial aspect corresponding to this. There was and had been no pyrexia. The lower abdomen was tender and tense, and deep palpation was impossible. On vaginal examination the uterus was found to be completely retroverted, and at first no lesion beyond this was discoverable. On careful and high examination, however, a quite small, fixed, and globular tumour was to be made out at the right side of the displaced fundus, and this was the most tender spot within reach of the examining finger. Speaking generally, the local signs were by no means commensurate with the history and symptoms of the patient. Either one had to do with a specially sensitive and nervous woman who could not bear the discomfort of a retroverted uterus with adherent right ovary (as the little tumour might well be supposed to be) or there was graver and more extensive pelvic mischief than it was possible to discover without operation. In a difficulty of this kind history and symptoms are often more reliable than physical diagnosis only. I offered the patient immediate admission into hospital and told her that an early operation would in all probability be necessary, believing the case to be one of abscess of the right ovary or pyosalpinx. She entered the hospital on the following day, and I operated on Dec. 1st. Before doing this, however, I sought a friendly consultation with the first attendant of the patient, by whose courtesy I am enabled to give an authoritative account of the early treatment, and it was with his full concurrence that the operation was performed.

It may be interesting to compare the exact condition found when the abdomen was opened with the result of the previous examination as already given. Deep at the bottom of the pelvis lay the completely retroverted uterus, large and heavy, hanging like the seat of a swing at the limit of its clumsy guide-ropes—the adhering Fallopian tubes,—the whole of the bony pelvis at some distance above this being packed by the many-lobed tumours of a double pyosalpinx. (Fig. 1.) Each distended tube was adherent to the pelvic wall right up to the pelvic brim, that on the left closely adhering to the rectum and containing gas of decomposition or infiltration as well as several ounces of pus; that on the right lying a little lower in the pelvis with one knuckle or small pocket of the convoluted tube slightly protruding at the side of the retroverted fundus, and forming the one and only abnormal swelling to be felt by vaginal touch.

The tubes were separated from their adhesions and the appendages removed. As the left pyosalpinx was liberated from the rectum, the main sac of the abscess was opened and a copious discharge of pus mixed with air (which bubbled freely from the sac) made one fear that the rectum had been torn. This proved, however, to be gas from the abscess-sac itself, a phenomenon not infrequently met with inside the abdomen when suppuration occurs in the neighbourhood of intestine, and the rectum proved to be uninjured. The pelvis was washed out and a drainage-tube placed in the pouch of Douglas on closing the incision. The patient made a good recovery.

On looking at the parts removed, which have been lying in spirit for some weeks and are barely a quarter of their former size, it is worthy of notice that the ovaries are scarcely recognisable as such. On both sides the abdominal end of the tube and what remains of the ovary are united together to form a false tubo-ovarian cyst or a tubo-ovarian abscess-sac of considerable size. Adhesions form between the tube and ovary. The fimbriated end of the tube becomes encapsuled by these, and here, between the ovary and tube, where there is least resistance, the main collection of pus naturally accumulates. This, which in my own experience is the most common result of acute pyosalpinx, has an important bearing on the gravity of the condition. When acutely distended (and before rupture has occurred) the surgeon often finds on operation that at some parts the covering of the abscess is formed only by some thin and stretched adhesion, and that the slightest traction on the tumour is sufficient to tear the adhesion and burst the abscess. I have but little doubt myself that this not only happens during operative treatment, but that it often may occur to some greater or less extent on a hasty examination, on attempted replacement of the uterus, and without any external interference, on sudden and powerful muscular action exerted by the patient herself. Rarely, under these conditions, a large abscess bursts and the patient dies. More frequently a limited extravasation occurs; acute peritonitis follows, resulting in fresh adhesions, which still further encapsulate the pus. What happened in the present case at the moment when the saucepan was lifted and the first acute attack of pain occurred it is difficult exactly to determine. There can, however, be but little doubt that some infective salpingitis was already present and that the tubes had become adherent laterally to the walls of the pelvis. These probably held the uterus nearly vertically in the

FIG. 1.

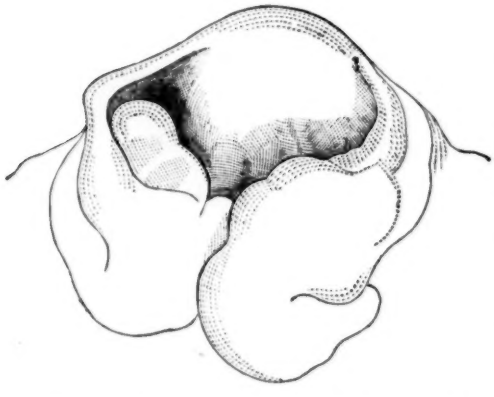


pelvis midway between ante- and retroversion. At the moment of strain intra-abdominal pressure was brought to bear on the anterior surface of the uterus. The latter was forced backwards, dragging on the tubal adhesions, and perhaps causing on the right side some slight extravasation. Such appears to me to be the most probable interpretation of the early history and symptoms, although it is possible that the retroversion may have been an old displacement and that the inflamed appendages from the first acquired a position above and in front of the uterus. In this case the strain itself would be the cause of direct disturbance of the tubes and possible partial rupture. However this may be, the subsequent growth and elevation of the tumours caused by the inflamed appendages were undoubtedly due to increasing purulent distension. In this way a swelling of small size originally may attain enormous dimensions, and the highest point of attachment of the tube when the salpingitis was recent may afterwards occupy a position nearer the centre of the growth. (See Fig. 1.)

The main point of interest is, of course, the latency of the physical signs and the difficulty of correct diagnosis. The leading features of the tumour typical of inflamed and distended Fallopian tubes are as follow. It forms a mass behind the uterus which feels like a retroflexion, but is distinct from the fundus—a mass which can be traced laterally on one or both sides as a transversely elongated swelling, often retort-shaped and elastic, a mass which is closely

adherent to the back of the uterus, and is usually acutely tender to the touch. (Fig. 2) These facts have become so well known, and their significance and importance so thoroughly appreciated, that there can be small wonder if to many minds the disease and such manifestations of it are practically inseparable. Yet we learn from this and similar cases that without any trace of tumour behind the uterus pyosalpinx of large size may exist. Further, those who have had not only the opportunity of detecting and diagnosing such tumours, but also of estimating to a very considerable extent their size and configuration and consistency, have often been pleased to find on operation that the estimation of size and shape thus formed has been wonderfully exact in all particulars. To such observers the sealed book of the pelvis becomes to a large extent an open volume. They can generally read it from ilium to ilium and from sacrum to pubes; they can usually map out and tell the condition of the rectum and bladder, the uterus and ovaries, and in favourable cases the tubes and ureters. It is therefore somewhat startling to find, as in the case under consideration, that the skilled observer may not simply overlook a serious tumour of considerable size, but actually fail to find it because it is beyond his powers of exploration to do so. A case in which this difficulty and partial failure have occurred needs special study, and should lead one to consider seriously the limitations and obstructions which may curtail one's power in pelvic and abdominal diagnosis. Many of these, such as muscular contraction, tension of the abdominal walls, distension of the bladder, and tension of the vaginal roof

FIG. 2.



caused by straining are familiar to most of us, and I need not dwell on them, nor will I refer to the difficulties belonging rather to secondary points of diagnosis after a tumour has been found when an endeavour is made to determine its nature or contents. I purpose solely to consider some of the occasional difficulties that may hide a tumour from discovery, and one of these is undoubtedly a retroverted uterus. The more complete the retroversion the greater is its power. The pelvic cavity in the female tapers off as you trace it downwards, ending in quite a small cul-de-sac behind the cervix in the pouch of Douglas, and when this lower narrowest limit of the pelvis is blocked up by a retroverted uterus but little can be felt on either side and nothing from above. Further, I will suppose that a tumour is present and resting on the anterior surface of the displaced fundus; if, now, an effort be made at re-position of the uterus, as the fundus is lifted the tumour as well as it will recede from the examining finger and no help be gained towards fuller diagnosis. True, the practitioner may feel that the uterus is more or less fixed, he may conclude that partial re-position is risky and perfect replacement impossible, but unless the tumour is of sufficient size and height to reach the abdominal walls above the pubes, and these are lax enough to admit of bimanual touch, the presence or absence of such tumour must remain a point undecided. And how large a space is left and how effectual the concealment afforded by the pelvis when the fully retroverted uterus horizontally blocks its floor, I question whether any can appreciate but those who have opened the abdomen under these circumstances and failed, perhaps, to reach the fundus save at the utmost limits of the fingers. A consideration of the bony pelvis will only partially make this clear. The absence of the convex sweep of abdomen clothing the pubes and iliac crests tends to minimise the space and fails to give an adequate idea of the depth beneath the surface at which such a misplaced uterus may be found. Within this space tubal or other tumours may develop and attain large size with scarcely any physical sign distinctive of their presence. And this brings me to the consideration of another difficulty in abdomino-pelvic diagnosis which has not, I think, received the attention it deserves. I allude to the limitation of our field for exploration caused by the position or plane in which a tumour lies. Any swelling, normal or abnormal, that lies well forward or backward is easily recognised on vaginal examination, and readily explored; if in front, between the hand laid above the pubes and the examining finger placed against the anterior vaginal wall; if lying backwards, when necessary, by combined examination through the rectum and vagina; but when the tumour is nearly vertical and cannot be brought conveniently into either of these positions, the case is very different. There is a mid-pelvic vertical plane that in a fat woman with rigid abdomen becomes a veritable *terra incognita*. A familiar example of the vagueness and difficulties of this region is occasionally afforded in early pregnancy. In nine cases out of ten, however fat and strong the patient, if the bladder be empty the fundus of the uterus comes well forward, and it is quite easy to gauge its size and consistency and to estimate correctly a pregnancy of six or seven weeks' standing. But in the occasional case where the uterus persistently occupies the vertical plane of which I have been speaking, with the fundus pointing to the ensiform or diaphragm, neither inclined to the pubes or the sacrum, in such a case if the abdomen will not allow of forcible depression to make bimanual touch complete, the case has to remain *sub judice* and the diagnosis must be deferred. Similarly, a small ovarian tumour or a pediculated myoma may occasionally choose this situation and so (for a time) elude the search of the most careful and painstaking.

It is hardly too much to say that most of the failures in pelvic diagnosis are due to the obscurity of this plane, or rather area, where bimanual examination becomes impossible. Now, both of these difficulties were united in the case which I have brought before your notice. The vaginal roof was obstructed by the retroverted and adherent uterus, while the tumour, or rather tumours, of the double pyosalpinx were extending their growth in a nearly vertical direction. In addition to this, palpation of the lower abdomen was obstructed or practically made impossible by the tension of its walls, due to local peritonitis. I have no royal method to propose by which such difficulties may be directly overcome. In some cases of high-lying pelvic tumours without retroversion additional information may be obtained by exploration through the rectum, but when a retroverted uterus blocks the way the finger introduced within the bowel after curving over the bulging fundus is useless for further examination. Indirectly, however, much may be gained from a clearer knowledge of the conditions that may lead to error, and of the limitations under which we have to work. This will drive us to correct or supplement the result (or non-result) of physical examination by the closest study of the lesser phenomena and symptoms of disease, a study perhaps which the age is in some danger of neglecting. A practitioner of the present day said to me a few weeks ago: "I have no time to spend over my patients as some men do. If any seem to be particularly ill I take their temperature. If the temperature is up I know they need careful examination and looking after. If not, I know that I need not trouble about them." I think this very fairly expresses the so-called "practical" spirit of the times, a spirit which is fostered in populous districts by decreasing fees and enormous practices. The truth is, however, that no rule of thumb will answer for all cases. In this one the thermometer gave no indication and used according to my friend's method would have been directly and cruelly misleading. The distension and tenderness of the abdomen were noticeable, but were not much greater than are sometimes found in sensitive and nervous women where no disease exists. The tongue was fairly clean, the pulse but very slightly accelerated (96, weak but regular), the bowels were open, and there was little or no difficulty in passing urine. But the observer who had time to be particular could hardly fail to notice the aspect of the patient—

the drawn expression of the face, the sunken, sleepless eyes, the semi-flexed attitude on standing or walking, and the care with which she carried herself (particularly in going down a step). These, and especially the constant abdominal pain, the importance of which was gauged by its power of preventing sleep, were invaluable in guiding those who were responsible for the case to right action, whereby the disease was removed and the patient restored to health. A woman's account of pain is proverbially unreliable. The test or measurement of this by its power of preventing sleep is a practical suggestion which I can thoroughly recommend. When necessary, confirmation or otherwise of the patient's statement on this point can be usually obtained from someone else living in the same house. When abdominal pain is bad enough to keep a patient awake all night it should never be treated lightly or disregarded. On the other hand, too, it should never be hastily or rudely stopped by opiates. It is a sign of great value. If it is the only sign we have its importance may be supreme. How to relieve it wisely is a question which may call for the most careful consideration, and in that consideration the question of operative treatment should usually have an important place.

Birmingham.

CAN ATROPHY OF THE ENLARGED PROSTATE BE INDUCED BY PARTIAL REMOVAL?

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IT has often been stated that operations upon the enlarged prostate not involving complete removal, or even removal of any large amount, are followed by permanent reduction in the size of the gland, altogether out of proportion to the immediate effect—in other words, that after partial operations the prostate may undergo a kind of involution or atrophy. If this can be established as a fact, the conclusion is a very important one. The question as to the amount of the enlargement that should be removed in performing supra-pubic prostatectomy is by no means settled. In the Hunterian Lectures on the operative treatment of the enlarged prostate I stated, as the conclusion at which I had arrived, that if the operation is to prove successful the whole of the vesical mass must be removed, whether it springs from the lateral lobes, or is an upgrowth from the posterior wall, or is a detached nodule; and that then the exploration must be extended down the whole length of the prostatic urethra. This, Professor White of Philadelphia[1] in the most recently published summary of the surgery of the enlarged prostate will not admit. He says "it may be true, but it has certainly not yet been demonstrated." On the other hand, Mr. Gilbert Barling[2] reports a remarkable case of supra-pubic prostatectomy in order "to emphasise the necessity for a free removal of prostatic tissue when prostatectomy is undertaken. The want of boldness in doing this is probably the cause of failure in most of the cases where operation has failed to give relief and the bladder muscle is not in a condition of atony." Probably much depends on the kind of growth; but there is evidently considerable difference of opinion. Cases in which diminution in size has followed operation have been published by many observers. Mr. R. Harrison[3] describes one in which, after the bladder had been drained through the perineum and prostate for six weeks, all the functional symptoms of enlargement disappeared. The size was reduced so much that little that was abnormal could be felt through the rectum, and the patient lived for seven years without experiencing further trouble. He also mentions that in several instances in which the bladder had been tapped through the perineum, and the cannula retained, he had noted distinct shrinking in size of the gland, and he states that he feels tolerably sure that a similar effect may follow simple drainage.

Two instances of a similar character have occurred under my own care. In one patient, who died some days after the bladder had been tapped through the perineum and prostate, the original direction of the trocar could be easily traced. The part of the track that lay in the median lobe formed a distinct angle with the rest, showing that the relative position occupied by the obstruction before puncture was very different from that it occupied after death. In the other, under the care of Dr. Challis of Walthamstow, the same thing was shown in another way. The patient had been tapped in the same fashion for drainage, the prostatic urethra being opened *en route*. A soft rubber tube was inserted. After a few days this was accidentally withdrawn by the patient. On attempting to introduce a rigid guide through the opening as a preliminary to another tube it passed along the urethra instead of across it. The projecting median lobe, which had been of enormous size, had shrunk so much that the prostatic urethra had almost regained its normal direction. The diminution on rectal examination was even more striking. Broome[4] of St. Louis, who describes himself as almost alone in America in deprecating the operation of prostatectomy and characterises the proceeding as unjustifiable, describes how, after the wearing of a supra-pubic drainage-tube, the hypertrophied glandular tissue undergoes atrophic changes and a low-level channel is established by physiological regression. "The patients had only to wear the tube during a few months; the longest period was seven (and that patient during this time gained forty-eight pounds in weight), and it now affords me great pleasure and satisfaction to be able to state that they are all well and apparently perfectly and permanently cured." Wishard[5] in four cases found marked diminution in the size of the rectal tumour after puncturing the lateral lobes with a small galvano-cautery point through the perineum. The punctures were from one-half to three-quarters of an inch in depth (in the prostatic tissue, which was exposed through a perineal incision by means of a Fergusson's speculum) and from two to six in number. Packard of Philadelphia wrote to me that after supra-pubic cystotomy for retention following enlargement of the prostate the gland in several of his cases shrunk very decidedly. Two cases in which this occurred are detailed in his paper on Supra-pubic Cystotomy in the Transactions of the American Medical Association for 1887. Professor White describes another case. The patient was sixty-six years of age and had passed no urine voluntarily for more than three years. There was intense cystitis with albumen and casts; and "pipe-stem" radial arteries. Small portions of the prostate immediately around and beneath the vesical orifice were removed, and nothing more. The orifice was freed, but no attention was paid to the lateral lobes. "The improvement is so disproportionate to the extent of any interference with the growth that I am convinced it is partly due to subsequent contraction of the remaining portion of the gland." The same thing has been noted after lateral lithotomy. The condition of the bladder has improved more than could be accounted for by the removal of the calculus, and in a few the diminution in the size of the gland has been confirmed by rectal examination. It must be allowed, therefore, that reduction in size does take place in some instances, and that it may follow incision, puncture with a trocar or the galvano-cautery, drainage either by means of the catheter in the urethra or through a supra-pubic opening, or partial excision through the bladder. The question is whether it is due to atrophy induced by the operation, or merely to subsidence of congestion, cicatrisation, and fibroid degeneration of the adenomatous growth. The evidence is wholly clinical. So far as I can ascertain, no one has had the opportunity of examining these glands microscopically—the only way in which atrophy could be proved. The first point to note is that nearly every case was operated upon for retention of urine, or for septic cystitis, or for both. Under these conditions, not only is the size of the prostate enormously increased by congestion, but it is made to appear very much larger than it really is. It is surrounded by the distended and often thrombosed prostatic plexus of veins, and the mass these form is as hard as the prostate itself. The finger can distinguish through the wall of the rectum nothing but uniform enlargement, and at the time of the retention it is impossible to say how much of this enlargement is due to prostatic overgrowth and how much to simple congestion. Time alone can tell. The prostate in ordinary cases of retention treated by catheterisation and rest in bed often diminishes very greatly in size in the course of a few weeks, and so

[1] Annals of Surgery, 1893.
[2] THE LANCET, June 10th, 1893.
[3] Lectures on Surgical Disorders of Urinary Organs, fourth edition, and Brit. Med. Jour., June, 1883.
[4] Transactions of the Missouri State Medical Association, 1893.
[5] Journal of Cutaneous and Genito-Urinary Diseases, 1892.

far as my own two cases are concerned I do not think that the reduction in either of them, great as it was, was more than could reasonably be accounted for in this way. In most, however, there was another, and perhaps a more important, factor in bringing about this result. It has been shown by Griffiths,[6] and it has been confirmed by my own investigations and those of others, that, while the primary change in enlargement of the prostate is a form of glandular overgrowth, fibroid degeneration, secondary to this, always follows at a very early period in some cases, leading to an exceedingly dense mass of scirrhous hardness, and much later in others; and I think it is allowable to infer that this fibroid transformation, if it has not already commenced, might be started from foci of cicatricial contraction following suppuration. Certainly the method employed in nearly all these cases was such as would cause suppuration and tolerably extensive cicatrisation afterwards. The maintenance of a cannula, for example, for many weeks together in the middle of an enlarged gland, or puncture with a galvano-cautery or the removal of portions of the mass through a supra-pubic opening in a bladder affected with intense cystitis, would undoubtedly lead to this. It is to this, I believe, that the benefit that has undoubtedly been experienced in many of these cases is due; and this, too, affords a reasonable explanation of the fact that the result in (unfortunately) the greater number has been negative—the fibroid transformation was already so far advanced in them that further contraction could not take place.

There is no evidence, so far as I have been able to ascertain, that atrophy has ever been induced in this way. True atrophy does occur after castration. The gland shrinks to a small fibrous nodule. But it is not said in any case that I have discovered that the prostate contracted to less than its normal size. All that is said is that the gland diminished to such an extent that nothing that was abnormal could be felt per rectum, or that in some the obstruction to micturition, in others the obstacle that prevented the passage of a catheter, almost disappeared; and this is not sufficient.

There are certain corollaries of some importance that follow from this.

1. Prostatectomy should not be performed shortly after an attack of acute retention. It is not possible, without waiting a little, to say how much of the enlargement is due to congestion, and the hæmorrhage may be severe.

2. In cases of septic cystitis it may be advisable to perform the operation in two stages. First the bladder should be drained by supra-pubic cystotomy, then after a few days, when the congestion has subsided and the urine has lost its foul and septic character, the obstruction at the neck should be dealt with. It is conceivable from the amount of shrinkage that has taken place that in some cases the second part of the operation may not be required, and there would be at least this advantage that the wound left after the growth had been excised—always a very ragged one—would not be bathed in putrid urine.

3. If prostatectomy, with the view of establishing a low-level urethra, is thought advisable after the congestion has subsided, the operation, as I mentioned in my lectures, should be thorough. Every atom of the obstruction then must be due to the growth. This is especially necessary where, as in Mr. Gilbert Barling's case, the prostate is very hard. If the overgrowth has already passed into the stage of fibroid induration, it cannot contract any more. It does not follow, however, that if the prostate is soft and adenomatous the portion removed should be a small one, in the hope that condensation and contraction would do the rest.

4. The merits of prostatotomy are not due to the division of the growth, but to the changes induced by subsequent drainage.

Wimpole-street, W.

A CASE OF CIRRHOSIS OF THE LIVER PRESENTING SOME UNUSUAL SYMPTOMS.

BY H. W. WEBBER, M.D. & B.S. LOND.

A PUBLIC-HOUSE-KEEPER aged fifty-one was seen first on Nov. 11th, 1893, complaining of abdominal pain and discomfort, with flatulence, nausea and a little sickness, and pain in the lower parts of the back. There had been constipation for two days; no headache was complained of. The tongue was coated, the pulse 90, and the temperature 100·8° F. The patient had been a heavy drinker in former years, and had continued this habit, but with more moderation, latterly. He was ordered an effervescing mixture and low diet. On the 12th the bowels acted slightly and the temperature was 101°. On examination of the abdomen the liver dulness was found to commence above at the lower border of the fifth rib, while below the edge of the liver could be indistinctly felt at a distance of rather more than an inch from the costal margin; no tenderness of the liver was felt on deep pressure. The abdominal walls were fatty, and scattered over the skin of the abdomen and lower part of the chest a few dilated bloodvessels were present. The edge of the spleen was not palpable or the splenic dulness increased; no peritoneal exudation was present. On examination numerous dilated vessels and petechial papules were found in the skin over the face, arms, and back. On the 15th the temperature was 100°, and pain in the back was still complained of, but the nausea had ceased. The bowels now acted once or twice a day; the urine was high-coloured and contained lithates, but no albumen. On the 19th the patient suffered slightly from epistaxis. The respiration was somewhat laboured and wheezy, though no adventitious sounds were heard on auscultation, nor was there any expectoration. He was now ordered a mixture containing potassium citrate, salicylate of soda, and ammonium acetate every four hours, and was put on slop diet. On the 23rd the temperature, which had been 100° for two days, rose to 103°, the patient's face was flushed and the eyes injected, the tongue was coated, and the pulse 120. The oozing from the nares still continued. The motions were of the colour and consistence of putty; the urine was high coloured, depositing lithates. The edge of the liver was palpable, more distinctly than at first, two inches below the costal margin, but only slightly tender on deep pressure. He was ordered quinine sulphate (one grain) in pill form every four hours, with the previous mixture. On the 24th the temperature fell to 100°, only to rise the day after to 102°. On the 26th it had fallen to 99°, but on the 27th it was 103°. On the latter day the patient had profuse epistaxis, and complained of headache. The bowels continued to act rather irregularly, but generally at least one motion was passed every day; it was of the same character as noted previously. No reaction for bile could be obtained from the urine, though the tests for this were applied on several occasions. The patient was now treated with a mixture containing chlorate of potash and Warburg's tincture given every four hours, with a dose of castor-oil when required to assist the action of the bowels. During the early part of December the condition very gradually improved, and the temperature kept generally at a much lower level. There was epistaxis at times, though not profuse. In the third week of December he was able to be about a little. This improvement, however, only lasted for a few days, and on Dec. 25th he had to take to his bed again. His condition at this time was as follows: the face was flushed and the conjunctival vessels somewhat dilated; there was no jaundice. The skin over the body generally was of a pale lemon or primrose tint, with numerous scattered papular petechial spots. Blood oozed occasionally from the nose. The tongue was coated on the dorsum and red at the edges. The whole of the fauces and pharynx were intensely red and covered with yellowish stringy mucus. The patient was troubled at times with fits of coughing, when he would expectorate a little frothy blood; he was constantly hoarse. No abnormal physical signs were discovered in the chest. The edge of the liver could be felt at a distance of three inches from the costal margin, rounded, the viscus now being distinctly tender. There was no enlargement of the spleen nor any signs of fluid in the peritoneal cavity. The cardiac sounds presented nothing abnormal; the pulse was generally 120, full, soft, and of medium tension, the temperature varying from 99° to 100·2° in the morning and from 101° to 102·4° in the evening. The throat was painted with borax and glycerine and an opiate linctus given to relieve the cough. On Dec. 30th a small percentage of albumen was found in the urine. On the 31st the patient had an attack of bleeding from the left nostril, which was so profuse that it was plugged with strips of lint soaked in hazeline. On the evening of Jan. 1st, 1894, there was a discharge of blood-stained fluid from the left ear. On the 2nd profuse hæmorrhage, requiring plugging, took place from the right nostril, and on the 3rd there was a blood-stained discharge from the right ear. No albumen was found in the

[6] Journal of Anatomy and Physiology, 1888, 1889, 1890.

urine on the 4th and none was found afterwards. Discharge of sanguineous fluid now continued fairly profusely from both ears, so that unless intercepted it would run on to the pillow. This continued constantly, though to no great amount, until Jan. 15th, when there was a profuse hæmorrhage from the left ear. This did not recur again, and the discharge gradually became purulent in character. The ears were syringed gently twice a day with a weak solution of Sanitas fluid, and the discharge received on sal-alembroth wool. The inflammatory condition of the fauces and pharynx gradually subsided, but about this time the gums became swollen, spongy, and purpuric, blood constantly oozing in small quantities. On Jan. 29th the patient was seen in consultation with Dr. Goodhart, who diagnosed the case as one of cirrhosis of the liver, the symptoms, however, being unusual. Treatment with Warburg's tincture was resumed, and an aperient mixture of magnesium sulphate ordered every morning, if necessary, to maintain a free action of the bowels. The patient now began gradually to improve, the temperature reaching normal in the morning, with a slight rise in the evening, by the second week in February. Slight oozing from the nostrils took place at times, the gums continued rather hæmorrhagic, and purulent discharge persisted from both ears; but the patient slowly gained strength. No œdema of the legs was present at any period of the case, nor was there any hæmatemesis or melæna. On March 24th the condition was as follows: there was a purulent discharge from both ears (on two or three occasions there had been slight tenderness over one or other mastoid process, lasting only for a short time, however), sometimes there was slight oozing from the nostrils. The gums were a little spongy and bled occasionally, but were much firmer, an astringent mouth-wash having been used. The faucial mucous membrane was still a little reddened. The skin presented numerous dilated vascular spots. The liver reached three inches below the costal margin and was only very slightly tender on deep pressure. The pulse was usually about 85 and the temperature was normal both morning and evening. The case was attended in conjunction with my partner, Mr. A. E. Garrett, to whom I am indebted for much information.

The case is of interest from the presence and persistence of three rather unusual symptoms: (1) hæmorrhage from the gums; (2) hæmoptysis; and (3) pyrexia. I am unable to find mention of bleeding from the gums in any of the text-books which I have examined, and, as will be seen from the result of an analysis of recorded cases below, it is extremely rare. With regard to the hæmoptysis, it may be questioned whether the source of the blood was not in the throat; but the fact that the patient was hoarse and at times wheezy, and that he had been often observed to have a distinct fit of coughing resulting in, and relieved by, expectoration of a fairly considerable amount of bright red frothy blood, renders it, I think, clear that a large part of the blood proceeded from the mucous membrane of the lungs. The presence of pyrexia in cirrhosis of the liver is not a very uncommon complication, but it is certainly unusual to find it of such long duration as in the present case. Epistaxis is also not an infrequent symptom, but I think that the persistent oozing with occasional sharp bursts of hæmorrhage met with in this case is not often seen.

In a series of fifty cases of cirrhosis of the liver in Guy's Hospital during the years 1891 and 1892, in one only was hæmorrhage from the gums noted; in this case the amount was small and it lasted about a fortnight. In three cases the expectoration was tinged with blood during some part of the time the patients were under observation, and in one case frothy blood was frequently expectorated in small quantities, but it seemed uncertain whether its source was not in the throat. Cases in which concurrent disease in the lungs was present have not been included. Epistaxis was reported in two cases only of the series, and in both these the amount of hæmorrhage was moderate. Pyrexia was present in nine cases; in three of these the temperature rose to 103°, in one of which the pyrexia was of an intermittent type and lasted for three weeks, in the other two the duration was for one week, it falling gradually. In five cases elevation of temperature to 100° took place on more than one occasion; in one case the temperature rose once to 101°, and more than once to 100°.

There remains one remarkable symptom to be noticed, the hæmorrhage from the ears, which would appear to have arisen by extension of inflammation through the Eustachian tube from the throat to the middle ear, with perforation of the membrana tympani.

THE TREATMENT OF SEA-SICKNESS.

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IN fulfilment of a promise made in a communication to THE LANCET of Feb. 15th, 1893, and in response to many inquiries, I now desire to place before the profession some facts which justify the statement which I made, "that chlorobrom, judiciously taken, will prevent an attack of sea-sickness or cut it short, if it has already begun, even in those most predisposed to this terror of ocean travellers." These facts are mainly based upon reports of ship surgeons in medical charge of steamers sailing between Great Britain and the United States, Canada, India, Australia, and New Zealand; but before proceeding to do this I consider it advisable to give a few introductory remarks on the nature of sea-sickness and on the remedies which at various times have been advocated as curative agents in this malady.

Nature of sea-sickness.—Personal experience or observation of those who are afflicted with sea-sickness shows convincingly the "quite, quite down feeling" of Shakespeare, which culminates sooner or later (after a short or more prolonged period) in vomiting, as a rule with little effort. The stomach is the master of the situation, and its contents are ejected. After this the erect position cannot be maintained, and the sick person is forced to lie down. Repeated vomiting is succeeded by distressing retching and mental and physical prostration, and the patient now lies half asleep, half awake, and is visited by dreams which are not pleasant. Vomiting, we know, can be excited by direct irritation of the stomach or of the vomiting centre in the medulla oblongata. Many laboured theories have been advanced as to which of these is the primary cause in the vomiting of sea-sickness. It would be an unprofitable task to discuss the arguments which have been brought forward. I believe that vomiting is due to gastric disturbance, and that the retching which follows vomiting depends on irritation of the vomiting centre. This conclusion will be more fully supported when we come to consider the treatment of sea-sickness.

Remedies tried in sea-sickness.—If we turn to non-medical writers we find that Bacon extolled a liver pad and a light binder over the abdomen to prevent the churning intestinal movements. Shakespeare was not a medical man, but his works often show that the *ars medendi* was not outside his ken. In "Cymbeline" he relates how the fair Imogen, before undertaking the journey to Italy to rejoin her lover, received a certain cordial with this advice: "If you are ill at sea, a dram of this will drive away all distemper." The heroine had not the opportunity of testing its efficacy in mal de mer, but when wearied by troubles on land she had recourse to the soothing draught, and sleep long and sound followed. Doubtless this draught contained some narcotic, but what this was the great dramatist has not revealed. Long ago green midshipmen in the English navy had a rope's-end applied to them to stir them up to their duties, and sea-sick men on board whaling vessels had buckets of salt water dashed over them. Boys on board training ships when sick were supported in each case by two persons, and had to toe the deck and to swallow occasionally spoonfuls of hot soup until they recovered. In recent years Dr. Chapman has recommended rest and the application of an ice-bag to the spine. He advised this because he considered that sea-sickness depended upon cerebro-spinal, or rather spinal, congestion; cocaine, nitro-glycerine, nitrite of amyl, atropine, and antipyrin have also had their advocates. Experience has, however, shown that the effect of any of these agents secures no permanent recovery. The only remedy which possessed a curative action seemed to be bromide of potassium, but its advantages were neutralised by its bitter taste and its liability to be rejected by the stomach when given in sea-sickness. Full details were published in THE LANCET of March 5th, 1892, of the steps which led me to combine it with chloralamide, and it is unnecessary to state them again. It is sufficient to say that the solution chlorobrom is stable, palatable, and safe. From 300 cases reported by thirty ship surgeons I shall give some extracts as to its utility.

Testimony of ship surgeons.—Dr. Belcher, of the Cunard

Service, confirms the opinion published in the article referred to, and says: "I have used chlorobrom in the steamship *Gallia* in December, 1892, January, 1893, March, 1893, December, 1893, January, 1894, and in the steamship *Servia* in June, 1892, and January and February, 1894. Among other things, I also tried various combinations in which bromine was present, such as potassium bromide with sp. ammon. to counteract any depression, sodium bromide under the same conditions, bromo-caffeine, sodii brom. efferves., and what is known as 'bromidia.' These all were tried with varying effects, yet, on the whole, I feel justified in saying that the maximum of benefit was derived from chlorobrom" [rather than any of the other preparations]. Dr. Macdonald, after a series of careful trials in different steamers, says: "I can testify to the efficacy of chlorobrom in sea-sickness. During my experience at sea I have tried almost every reputed remedy, including cocaine, quinine, nitrite of amyl, &c., but in most cases with indifferent and uncertain results. Of late it has been my custom to prescribe a mixture of bromide of potassium and spirit of chloroform; this I found to be of considerable service, but unfortunately, like other remedies administered by the mouth, it was exceedingly liable to be rejected by the stomach. Chlorobrom, however, to my knowledge, has never been rejected and has seldom failed in allaying gastric disturbance and nausea and in inducing a refreshing sleep, from which the patient awakes with a clear head, a fair appetite, and a remarkable freedom from those symptoms which were so painfully evident prior to the administration of the solution. Its perfect safety, agreeable taste, and freedom from after-effects all combine to render it an admirable preparation and an ideal sedative." Dr. Macdonald, in his report, gives details of a case where sea-sickness was complicated by gastric ulcer, and the vomited matters had the peculiar "coffee-ground appearance" of this affection. He gave half an ounce of chlorobrom which was retained, and in twenty minutes secured a sound sleep, which lasted for eight hours. Afterwards at frequent intervals fluid nourishment was given with finely chopped ice and small doses of chlorobrom. There was no return of nausea or retching. "Unless the solution had been retained," Dr. Macdonald says, "I believe there would have been great danger of perforation of the wall of the stomach from excessive retching." Dr. Ledingham, superintending surgeon, Queensland Government Emigration Service, gives interesting details of cases treated by chlorobrom, and says: "I have no hesitation in pronouncing it the most satisfactory remedy yet produced for the treatment of sea-sickness. The ease of administration, safety, and complete absence of objectionable after-symptoms are points of great importance." Dr. John Boyd, surgeon to the steamship *City of Rome*, tried chlorobrom in many cases with satisfactory results, and attributes the vomiting which sometimes returned on the morning following the sleep it had secured to constipation, for whenever the bowels were freely moved by a saline purgative the patient soon recovered. Dr. Boyd also mentions a case of a passenger, six months pregnant, in whose case there was a threatened miscarriage. "I gave her a dose of two drachms, which was retained. The retching ceased, and in the course of half an hour she fell asleep. Next morning she was so well that she could go on deck, and had no return of mal de mer."

Hitherto I have only given reports of cases of sea-sickness in its second stage which have been treated by chlorobrom. I now propose to refer to its prophylactic value in long and short voyages. To ensure success in this treatment, it is essential that the *primæ viæ* should be freely moved for two successive nights before embarkation, and that for the first two or three days of the voyage the traveller should eat "spare and dry," avoiding above all things soup, sweets, and pastry. A full dose of chlorobrom (one tablespoonful and a half for a male and one tablespoonful for a female) must be taken for the first three nights of the voyage. After this period a further use of the solution will probably be found to be unnecessary and all restrictions of diet may be removed. Idiosyncrasies of the patient may prevent in very rough weather absolute freedom from sea-sickness, but on the evidence produced there seems to be every probability that in the majority of cases immunity may be obtained.

Evidence of prophylactic action in long voyages.—Dr. Crawford, of the Anchor Line Service, has directed special attention to this part of the subject, and after an experience of five months writes: "I can confidently state that in the great majority of cases chlorobrom has a decided effect in preventing sea-sickness. In the case of females, who almost always dread a voyage, I have found it even more efficacious when taken for three or four nights before sailing, as well as during the usual treatment, on board. Dr. R. C. Robertson, after an experience of three months, says: "There is a probability that it will prove an absolute preventive of the onset of sea sickness in a very large proportion of cases, provided that due attention is paid to the stomach and bowels for a few days previously to sailing." He gave details in THE LANCET of July 8th, 1893, of a case where its prophylactic action was distinctly proved. Reports of cases are also in my possession from Drs. Munro, Anderson and Muat, as well as from various other ship surgeons, as to the prophylactic action of the solution in sea-sickness. They and passengers under their charge have taken it with the best results. These reports need not be published as the evidence is very satisfactory; but the following information, though not from a medical source, is so complete and instructive that its perusal deserves attention:—Mrs. R—— writes from Cape Town, South Africa, Aug. 22nd, 1893: "Our party numbered eight—five adults and four children aged respectively ten, seven and a half, four and a half, and three years. We sailed by *Hawarden Castle* from Southampton about six o'clock on the evening of June 17th. We all retired soon after sailing, but before doing so each had a dose of chlorobrom as per direction and all slept well, the children waking up as bright and well as when at home. Three of the ladies complained of headache, but were able to be up, and had not a touch of sea-sickness. I myself woke with a slight headache, but after dressing and a cup of tea felt better, and had not afterwards a touch of sea-sickness. This voyage is the sixth I have made, the first being in December, 1878, and in all of them I suffered severely from sea-sickness. While going to England in June, 1892, we were all very ill indeed, and the youngest child suffered every time the steamer rolled more than usual all through the voyage. This time the children were remarkably well and I never felt better than I did all the voyage."

Prophylactic action in short voyages.—It has been impossible to obtain evidence from medical men as to the prophylactic action of chlorobrom in short voyages, since steamships making such voyages are not provided with ship surgeons. The evidence, however, from other sources as to the value in short voyages is, if possible, more convincing than that already brought forward. From numerous letters received, and from personal statements made to me, I have no hesitation in saying that complete immunity is derived from its use in the voyage from Harwich to Rotterdam or from Queenborough to Flushing, or from Holyhead to Dublin. Sleep is always secured, and the passenger awakes when the steamer is nearing the harbour. Even in the short passage from Dover to Calais, or *vice versâ*, chlorobrom, taken as a gastric sedative in a teaspoonful dose, was sufficient, in the case of a gentleman and his wife who were very bad sailors, to avert any squeamish feeling. Doubtless evidence *pro* or *con* will be forthcoming on this important point; but I can confirm the opinion expressed by Dr. Masters in THE LANCET of Nov. 11th, 1893, as to its efficacy in persistent vomiting not arising from sea-sickness, and as to the relief it affords in cases of gastric ulcer, when taken in doses varying from 30 to 60 minims.

Summary.—1. In *long* sea voyages no prophylactic benefit can be secured by the use of chlorobrom unless for two nights before embarkation the passenger pays due attention to the stomach and bowels by taking a cholagogue pill. Further, in the case of a person who dreads a voyage a dose of the solution should be taken. 2. The diet on board ship should be "spare and dry." Soup, pastry, and sweets should be especially avoided, and no full meal should be indulged in. A hypnotic dose (one tablespoonful and a half for a male, and one tablespoonful for a female) should be taken for three nights. 3. In *short* voyages, when the steamer leaves, perhaps, at 10 P.M., the passenger should immediately retire to rest, and take one of the doses mentioned. 4. In a *shorter* passage across the Channel a teaspoonful should be taken before going on board. 5. By following these directions immunity from sea-sickness is obtained in the great majority of cases, but if they be not followed it is to be remembered that chlorobrom has no effect in arresting an outburst of vomiting. If it is given in a teaspoonful dose every ten minutes until a tablespoonful and a half or a tablespoonful have been taken, it will almost invariably check retching and depression.

Glasgow

AN OVERDRIVEN HEART.

A CLINICAL STUDY.

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I SELECT the following case for description as typical of cases encountered not infrequently; and I have chosen the term "an overdriven heart" as the most convenient one around which to group the symptoms.

The patient was a woman aged thirty-four, unmarried, of spare build and neurotic look. I was summoned to see her on July 20th, 1893. I found her propped up on a couch, cyanotic, breathing with great difficulty, the chest heaving with the breathing and shaking with the heart's action, and her whole appearance betokening intense distress. She complained of her heart "beating all through her body," of most acute pain between the shoulders, a great weight at the pit of the stomach, sharp pain in the region of the breast bone, frontal headache, pain in the left arm-pit, and shooting down the left arm, numbness in the left arm and hand, a burning pain in the left hip bone, constant diarrhœa with pain in the abdomen, and a feeling of great exhaustion. The appetite was capricious, and the tongue was furred. This condition had existed for several weeks. She could not walk without pain and breathlessness, and when resting she had to be propped up day and night. The pulse was moderately full and hopelessly irregular. The heart's action was almost indescribably irregular; the thin chest walls viewed from the front showed heart impulse well-nigh everywhere. The liver was enlarged and excessively tender to touch. There was no œdema or anything of the sort, with the exception of a slight swelling of the left ankle. The flow of urine varied directly with the palpitation. The indications of treatment were obvious. Here was a heart evidently struggling against difficulties, here was a circulation embarrassed in the highest degree; hence lighten the heart's difficulties, relieve the embarrassed circulation. This I endeavoured to do in the quickest possible fashion short of blood-letting. The effect was well-marked and speedy. In less than twelve hours misery had given place to relief; in twenty-four hours all pain had well nigh gone. I shall revert to the treatment and subsequent history presently. Meantime I shall give the chief facts in the patient's previous history as told in detail some months afterwards.

The patient had not been strong since she was twelve years old. At that age she was very stout, chlorotic, and subject to pain in the left side. She was told she could never go from home to undertake any sort of work. She menstruated first when nearly fifteen years old. At that time she was short-breathed and suffered from sickness and indigestion. In 1881 (when she was twenty-two years old) she had her first attack of rheumatic fever. She was confined to bed for nine or ten weeks. Since that time her heart had always given her trouble, and had been painful. In 1882 she was in a very weak state. She had to stop every step or two on going upstairs. The old heart pain continued, and she also felt great pain from the neck downwards behind the clavicles, and in the chest behind the margins of the sternum. She suffered from very distressing hiccough. She was treated by a medical man in Liverpool, who told her that her heart was in a weak condition, and that she must not exert herself in any way in case she dropped down dead. She was pronounced to be suffering from heart disease, and her sister was told not to be alarmed if at any time she found her dead. In 1884 her mother died from "valvular heart disease." The mother was a great sufferer. Both she and her daughter used to take the same medicine. In 1885 she was in Birmingham. She was under treatment by a medical man there for some months. She was very weak; for three weeks she suffered from cough, with abundant frothy expectoration. Her appetite was bad. The heart was very troublesome, and at this time, as in some previous illnesses, the heart-sounds were so loud that they could be heard all over the room. She suffered constantly from heart pain, a feeling of great weight over the pit of the stomach and in the head, and pain in the side and arm as before. Her heart was pronounced to be "hanging on a thread." In 1887 she took no medicine but was never free from distress and heart pain. In December of that year she was very sick for a month. In 1888 she was in bed propped up from Jan. 1st till May 15th, treated by a medical man in Wales. On account of sickness she was fed for thirteen days by enemata. She was pronounced to be suffering from heart disease, the heart being characterised as "quite shattered." In February she had rheumatic fever for a few days. On March 20th a great numbness struck her all down the left side and she could not move. She felt cold all over; the left arm was numb, the left hand was quite white; there was burning pain in the left hip-bone; diarrhœa was very severe. She used to hear her heart "rub against her side" and she suffered constantly from headaches and dizziness. The medical attendant gave her up that time. In 1889 she was better, only she had always to take medicine for her heart. In 1891 she had another attack of heart trouble associated with cough. She suffered from profuse hæmorrhage from the lungs. There was diarrhœa with pain in the bowels, which was very bad every morning about 6 o'clock. She felt sick and had pain in the side and between the shoulders. After this she was better and she used to go about a little, but felt miserable. She could not lie down at night, but had to be propped up with pillows. She suffered from constant heart pain, great breathlessness, palpitation on walking, inability to walk far or at an ordinary pace, persistent diarrhœa, and menorrhagia and leucorrhœa. This condition existed until July, 1893, and she says it may be regarded as her normal condition for thirteen years. Exacerbations consisted in increased palpitation, excessive difficulty in breathing, intense pains, increased diarrhœa, and menorrhagia with profuse leucorrhœa. The treatment of these exacerbations may be summed up thus: for the heart, digitalis and, later on and in addition, strophanthus; for the diarrhœa, astringents; for the leucorrhœa, vaginal injections.[1]

When I saw her first her condition was as I have described at the beginning of this communication. I have said that the indications of treatment were obvious. The most convenient way of relieving the heart's embarrassment was to drain the portal system, at the same time to administer cardiac stimulants to obviate possible collapse by the sudden withdrawal of a large quantity of fluid from the system.[2] The result was as I have stated. The patient was able to lie down in bed next night instead of being propped up, the great pain between the shoulders was gone, and the precordial pain was very much, though not entirely, relieved. The feeling of great weakness continued.

On July 24th I examined the patient with a view to putting her under a regular course of treatment. The condition I found or inferred was as follows: great hypertrophy of the heart with dilatation; a loud mitral systolic murmur propagated to the axilla and to the inferior angle of the scapula. The heart was much more regular in its rhythm. The impression it gave me at the time was that it had abundance of energy, but was directing its energy badly. Three days before, it seemed like a spirited horse struggling with an overload; then, when lightened, it seemed to have settled down to more regular work, but still with a good deal of the embarrassed motion, as if irregularity had become a habit that it could not lay aside all at once. As to diagnosis, the patient had told me she was suffering from heart disease, and I was not asked my opinion for some time after, and then I hesitated. The case was by no means clear. I was not aware that it had been so very definitely diagnosed and prognosed, and ignorance of the diagnosis and prognosis probably encouraged my doubt. Here was a hypertrophied heart, but with dilatation, and undoubted mitral systolic murmur—say mitral regurgitation, for that matter—and a history of rheumatic fever. But then, as a set-off to all this, I had the clearest notion that a mitral

[1] These statements are not made on hearsay evidence. They are supported by prescriptions and by the clearest testimony of her friends, who were repeatedly warned about her condition and its possible termination. The patient, while not a dabbler in drugs, knew perfectly well the actions upon her system of the various drugs she had been taking, and all her idiosyncrasies. Thirteen years' familiarity with heart disease had made her a very observant, though not morbid, student; and her statements of facts and dates are most precise. Her assertion that she had taken "bucketfuls of digitalis," which was the only one smacking somewhat of metaphor, is, I believe, on consideration, literally true.

[2] That this "draining of the portal system" as a means of relieving this state of the heart is merely a mechanical question of blood pressure I am by no means prepared to affirm. I am willing to allow great room for theorising that the *driving* of the heart may be due to the presence of morbid products in the blood or other parts of the system as much as to the natural response of the heart to do increased work by additional difficulties thrown against it; but physiological or pathological theorising does not interfere with the treatment, based on empirical clinical observation which is as truly rational as any deduction from physiological or pathological theory.

systolic murmur does not necessarily indicate organic disease. This fact had forced itself on my attention very obtrusively. A mitral systolic murmur in my own heart, at one time doubtfully of organic causation, had, under the skilful treatment of my friend Dr. George A. Gibson, cleared up so that afterwards no trace of it remained. Besides, I had seen many instances of the same thing, and hearts temporarily in as bad a state as the one I was treating; and I had under observation at the very time two or three other cases of heart disease (one a double aortic case without anæmia) in which murmurs were rapidly disappearing. So instead of troubling much about prognosis, or even exact diagnosis, I set myself to the task of treating the dilatation and keeping an eye on the compensatory hypertrophy. This task was lightened by more than half by the intelligent interest the patient took in her own case and by the confidence and fidelity with which every order was carried out and every indication watched.

To give details of the treatment and progress would prove tedious. The principle I worked by was this: to keep the heart's load light, and keep the heart toned up to bear it. I did not send the patient to bed. The heart tonics I employed were strychnine, arsenic and cactina, sometimes one alone, sometimes two or more in combination according to the indications. Under treatment the patient improved very much. She was able to sleep all night in the horizontal position and to walk about during the day; the cardiac pain disappeared, and the appetite improved. There was no return of diarrhœa or leucorrhœa. The heart gradually returned to the normal condition. The systolic murmur disappeared from the mitral area, but lingered in the tricuspid. From this area it disappeared and left a murmur, very localised in extent, in the pulmonary area. This last disappeared also, and there has been no return of murmur in any region. This non-recurrence is all the more remarkable considering that after this the patient had two attacks of rheumatic fever, an attack of trifacial neuralgia of the most intense character, so violent that the skin and deeper structures along the course of the supra-orbital and supra-trochlear nerves ulcerated almost to the bone and left her marked for life, and suffering (I hope only temporarily) from ptosis[3] and paralysis of one of the ocular muscles.

In addition to this she had an attack of bronchitis, accompanied by a very distressing, racking cough. This was the only occasion on which I felt really anxious for my patient's condition. But the heart stood all the strain of those attacks; nay, the last attack seemed to pass off and leave the patient with new life and a new body. For hitherto, although very much better than after any previous illness, she could not be pronounced as coming up to the standard of good health; but after this attack, which seemed to be really the turning-point, she gained strength and sprightliness every day. Her present condition, and she has been without drugs for a month or two, is this: her diet is unrestricted; she sleeps all night without wakening and rises refreshed and full of vigour in the morning. There is no diarrhœa, leucorrhœa, or menorrhagia. She never feels she has got a heart, but has a sensation as if something had been removed from her side. She can walk for hours in the open air, and climb steep hills without faintness or breathlessness. In short, after twenty-two years of invalidism, the last thirteen of which were passed as a severe sufferer from heart disease, she lives now as an ordinary individual. The heart is normal in size, regular in its rhythm, and without any murmur.

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[3] Later note.—The ptosis has now disappeared.

ON FORMALDEHYDE AS AN ANTISEPTIC.

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FORMALDEHYDE is a gas with a pungent odour causing some irritation of the eyes and nose. It is readily soluble in water, forming a clear, stable, practically non-poisonous solution. Like all aldehydes, it combines readily with sulphuretted hydrogen and with volatile compounds derived from ammonia, and therefore acts as a deodorant. That it also possesses antiseptic properties was noticed by Löw[1] and Fischer[2] in 1886, and Trillat in 1888 showed that the addition of this substance in solution to urine prevented its decomposition. Since that time Buchner,[3] Aronsohn,[4] Trillat and Berlioz,[5] and F. Cohn[6] have investigated the properties of formaldehyde, while Lehmann,[7] Gegner,[8] and Blum[9] have examined its value as a general disinfectant, and Stahl,[10] Hauser,[11] and Liebreich[12] have reported on its suitability for special purposes. All these writers are agreed in attributing to formaldehyde powerful antiseptic and disinfectant properties. Blum, however, points out that, though in small quantity it arrests growth, it is only after the prolonged action of moderately strong solutions (2 per cent.) that the micro-organisms are killed. Our results are confirmatory of Blum's statements.

The solution of formaldehyde in water is stable when kept in well-stoppered bottles, but in open vessels there is, of course, some loss of the gas. To gauge the strength of the solutions used in these experiments a modification of the process devised by Trillat was used. This method is based on the reaction of formaldehyde with ammonia, resulting in the formation of hexamethyleneamine ($6\,CH_2O + 4\,NH_3 = (CH_2)_6N_4 + 6\,H_2O$). If a known volume of the formaldehyde solution be added to a known volume of standard ammonia, and the excess of ammonia be estimated by distilling into standard acid and titrating, then the amount of formaldehyde can be calculated according to the above equation. The source of the formaldehyde used was a solution of the substance in water lately introduced under the commercial name of "formalin." "Formalin" contains 35 to 40 per cent. of formaldehyde with a minute trace of formic acid.

The first experiments were made to determine the proportion of formaldehyde required to inhibit the growth of specific micro-organisms. For this purpose formalin was added to tubes of bouillon, so that they contained formaldehyde in proportions varying from 1 : 1000 to 1 : 20,000. These tubes were then inoculated with the micro-organisms to be tested, capped, and placed in the incubator, or at the most favourable temperature for growth. The cultures used for inoculation were vigorous—twenty-four-hours-old growths in bouillon or on agar. The results are embodied in the following table:—

Organism.	Proportion of formaldehyde inhibiting growth.	Proportion of formaldehyde allowing some growth.	Remarks.
Staphylococcus pyogenes aureus	1: 5,000	1:10,000	Growth poor in 1:10,000 and much delayed in 1:20,000.
Bacillus typhosus	1: 15,000	1:20,000	Very scanty.
Bacillus coli communis.	1: 7,000	1:10,000	After seventy-two hours' incubation.
Bacillus anthracis	1: 15,000	1:20,000	Scanty growth on sixth day.
Spirillum choleræ	1: 20 000	—	—
Bacillus mallei	1: 20,000	—	—
Bacillus pyocyaneus	1: 7,000	1:10,000	On the third day.
M. prodigiosus	1: 20,000	—	—
Bacillus lacticus	1: 20,000	—	—
Bacillus butyricus (Hueppe)	1: 20,000	—	—

Formaldehyde is shown by these experiments to possess in a high degree the power of inhibiting the growth of various microbes. This power varies with the micro-organism tested, but is in all cases considerable and would place formaldehyde in this respect among the first three or four antiseptics in Koch's Tables.

The difference in the inhibitory power exercised by formal-

[1] Journal für Practische Chemie, Band xxxiii., p. 221.

[2] Berichte der Deutschen Chemischen Gesellschaft, Band xxii., p. 359; xxiii., p. 384.

[3] Münchener Medicinische Wochenschrift, 1889, No. 20.

[4] Berliner Klinische Wochenschrift, 1892, p. 749.

[5] Comptes Rendus, tome cxiv., p. 1278; cxv., p. 290.

[6] Botanisches Centralblatt, 1894, p. 573.

[7] Münchener Medicinische Wochenschrift, 1893, No. 32.

[8] Ibid. [9] Ibid.

[10] Pharmaceutische Zeitung, 1893, No. 22.

[11] Münchener Medicinische Wochenschrift, 1893, pp. 567 and 655.

[12] Therapeutisches Monatsheft, No. 4, p. 183.

dehyde on bacillus typhosus and bacillus coli communis has been proposed by Schild[13] as a means of distinguishing easily between these two organisms. Cultures of these microbes from different sources show very considerable variations in their behaviour towards the antiseptic, but on the whole Schild's method of distinction should be useful. It is to be noticed that even when the proportion of formaldehyde present is too small to prevent growth the cultures then obtained are scanty, and their development is long postponed. The fact that growth does not take place in this formaldehyde bouillon is not proof that the microbe has been killed. Thus bacillus mallei, which showed no growth after four days' incubation in a 1 : 15,000 bouillon, when transferred to a fresh nutrient solution gave rise to a culture normal in all respects except in requiring an unusually long time to develop. Blum has shown with regard to anthrax that exposure to the antiseptic does not cause attenuation. Experiments were also made on commercial yeast to determine the inhibitory dose, and also what effect, if any, was produced by small quantities of formaldehyde on the fermentative power of the organism. To sterilised wort the antiseptic was added in the proportions of 1 : 25,000, 1 : 15,000, 1 : 10,000, and 1 : 2500. Yeast was then added, and the solutions allowed to ferment at a favourable temperature. No fermentation took place in the wort containing 1 : 2500 of formaldehyde. In the other flasks the rate of fermentation was inversely proportional to the amount of formaldehyde added, but when the process was complete the amount of alcohol produced was the same in all the flasks and equal to that formed in a wort to which no antiseptic had been added. Provided then that the amount of formaldehyde present is not such as to prevent growth, it exercises no influence on the power of fermentation, though a longer period is necessary to complete the action. Taking these results in conjunction with the proportion of formaldehyde required to prevent the growth of bacillus lacticus and bacillus butyricus, it would seem that the inhibitory dose for yeasts is much higher than for bacteria, and that this antiseptic might be used to arrest secondary fermentations in alcoholic liquids.

The time required by solutions containing 1 per cent. and 1 per mille of formaldehyde to cause the death of various microbes was next determined. In experiments on this point it is absolutely necessary that methods be used in which the antiseptic is thoroughly removed from the test culture or great dilution secured, as the inhibitory action of formaldehyde is so great. Sterile silk threads were soaked in cultures of the various micro-organisms and then transferred to the antiseptic. After exposure for various periods the threads were withdrawn, well washed in sterile water, and transferred to bouillon tubes. These were exposed to suitable temperatures — usually 37° C. The cultures used were in all cases twenty-four-hours-old bouillon cultures. The culture tubes containing the treated threads were kept for more than eight days in order to avoid errors from retarded growth. The tubes in which no growth took place were tested by inoculation in order to determine whether they were still suitable for growth of the microbes or whether the sterility was due to transferred antiseptic. They all yielded copious growths on secondary inoculation. Control experiments were made in all cases, the threads being soaked in water for a time equal to that of the maximum period of exposure to the antiseptic. In the case of the experiments with 1 per mille solution, where the time of exposure was over seven hours, a different method was adopted. In these the cultures were made in a known volume of bouillon, and an equal volume of formaldehyde solution was added, so that the resulting mixture contained 1 per mille of the antiseptic. Bouillon tubes were inoculated from this solution.

One per cent. solution.—Threads examined at intervals of ten minutes gave :—

Organism.	Time required to kill the microbes.
Staphylococcus pyogenes aureus ..	Between 50 and 60 minutes.
Bacillus typhosus..	„ 40 and 50 „
Bacillus coli communis	„ 30 and 40 „
Bacillus anthracis	Less than 15 minutes.
Spirillum choleræ	„ 15 „

[13] Centralblatt für Bakteriologie, Band xiv., p. 717

One per mille solution.—Threads were examined at intervals of half an hour. When the exposure was between seven hours and twelve hours the examination was hourly; and then after twenty-four hours. The following results were obtained :—

Organism.	Was not killed after	Was killed
Bacillus anthracis (no spores) ..	—	In 30 minutes.
Spirillum choleræ..	—	In 2 hours.
Staphylococcus aureus	12 hours.	In 24 „
Bacillus typhosus..	12 „	In 24 „
Bacillus coli communis	12 „	In 24 „
Bacillus mallei	11 „	In 12 „
Putrefactive organisms	24 „	—

Experiments were made to see how far these solutions might replace the 1 or 2 per cent. solution of carbolic acid frequently used for the preliminary disinfection of soiled linen before washing. Soiled cloths from the post-mortem room and sterilised cloths soaked in cultures were left for from twenty to twenty-four hours in 1 per cent. and 1 per mille solutions of formaldehyde. After washing in sterile water they were examined by cultivation.

	1 per cent solution.	1 per 1000 solution.
Cloths from post-mortem room	Sterile	Not sterile
Cloths soaked in bacillus typhosus ..	„	Sterile.
Cloths soaked in spirillum choleræ ..	„	„
Cloths soaked in staphylococcus aureus	„	„

The solutions are without any ill-effect on clothes and are efficient as antiseptics, especially the 1 per cent. solution, and the more so as in practice the adherent formaldehyde solution would not be removed.

An examination of the individual results shows that there is a marked lengthening of the time required for development as the time during which the antiseptic is allowed to act is increased, until the point at which death of the microbe occurs is reached. Thus in the case of the bacillus typhosus acted on by 1 per cent. solution, while the control grows readily in twenty-four hours, the threads exposed for twenty minutes show no growth until after forty-eight hours, and those exposed for thirty minutes develop only after seventy-two hours. Similar results obtain in the case of the 1 per 1000 solutions and with the other organisms examined.

Formaldehyde vapour.—The action of the vapour evolved at the ordinary temperature (19° C.) from 40 per cent. solution of formaldehyde was examined. A few experiments were made by exposing potato cultures under a bell jar to the vapour, but the results were unsatisfactory, owing to the thickness of the culture. Bouillon cultures twenty-four hours old were allowed to dry in a thin layer on sterilised glass slips and were then exposed to the vapour from 5 c.cm. of 40 per cent. formaldehyde solution under a bell jar of 3320 c.cm. capacity. The solution was placed under the bell jar ten minutes before the cultures were exposed. The glass slips after exposure were dropped into bouillon tubes and placed at suitable temperatures.

The organisms killed in less than ten minutes were bacillus typhosus, bacillus coli communis, micrococcus prodigiosus, and spirillum choleræ; after twenty minutes' exposure staphylococcus pyogenes aureus was killed; and after thirty minutes' exposure bacillus pyocyaneus succumbed.

Formaldehyde vapour is, then, obviously a powerful disinfectant, and from its harmless character, the freedom from damage of articles exposed to it, and its ready volatility it would seem peculiarly adapted for the disinfection of rooms. Experiments were made to test this suitability, but were stopped by the pulling down of the experimental room. In one complete experiment which was made one ounce and a half of 40 per cent. formaldehyde was evaporated by means of a spirit lamp in a room of 1548½ cubic feet capacity. The room was first swept vigorously so as to disturb the dust as much as possible, and immediately after the sweeping ten litres of dust-laden air were examined. At the end of the experiment, after four hours' exposure to the vapour, the sweeping was again repeated, and a further ten litres of air were examined. After aspiration of the first ten litres threads soaked in various cultures and cloths from the post-mortem room were placed in the room, the evaporation of the solution was started, and the door was closed and sealed. The threads were exposed (1) on the floor level and five feet from

the source of vapour, and (2) at a height of three to four feet and three feet from the solution. Some threads were exposed freely to the vapour, and some were placed between folds of filter paper. Samples were removed at the end of two hours and again at the end of four hours. The results were not decisive, though showing decided effects of the vapour. There is no reason why a much larger quantity of antiseptic should not be used. The opening of the room at the end of two hours also considerably diminished the amount of vapour present.

Air examination.—The air examined before the action of the vapour yielded 429 organisms per ten litres, and after disinfection 71.

Micro-organisms.—The organisms employed were staphylococcus pyogenes aureus, bacillus typhosus, bacillus coli communis, bacillus pyocyaneus, and the spores of bacillus subtilis. All the organisms were affected—i.e., they produced more scanty cultures, or cultures of slower development than control threads. Those threads exposed on the floor were slightly more affected than those at a height of three or four feet, and there was a slight difference in favour of those protected by the filter paper. Of the individual organisms (1) staphylococcus pyogenes aureus was in no case sterilised, though the growths were less than the control; (2) bacillus typhosus: of 10 threads exposed 5 were sterile; (3) bacillus coli communis: 2 out of 10 threads were sterile; (4) bacillus pyocyaneus: delayed growths, but none were sterile; and (5) bacillus subtilis spores were in no case destroyed. A few experiments were made on the possibility of sterilising the skin, but in view of the difficulties noted by Lockwood they are too few to warrant any conclusions. The experiments were made on the cadaver, and the test used was the inoculation of a portion of the treated skin. Skin which was well washed with soap and water, then with 1 per cent. formaldehyde and left covered for five minutes with a cloth soaked in the solution, proved, after washing with ether to remove the antiseptic, to be in many cases sterile. From this point of view it has the practical advantage that it has little or no effect in retarding the formation of a lather with soap, comparing favourably with corrosive sublimate in this respect.

Formaldehyde in solution and as a vapour possesses decided antiseptic and disinfectant properties, and its non-poisonous character, easy vaporisation, and freedom from corrosive or other damaging action on fabrics will render it useful for many purposes of practical disinfection.

Northwick-terrace, St. John's Wood, N.W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GUY'S HOSPITAL.

SARCOMA IN THE MESO-SIGMOID; RESECTION OF SIGMOID WITH GROWTH; USE OF MURPHY'S BUTTON; RECOVERY.

(Under the care of Mr. W. ARBUTHNOT LANE.)

THE presence of a tumour in the meso-sigmoid as an isolated growth not of secondary character is an occurrence of great rarity. There are few instances published of removal of growths thus situated, involving as it does excision of bowel also. Dr. Duret[1] removed a large fibro-lipoma of the descending mesocolon. There was also marked prolapse of the uterus, and operation was advised, the diagnosis being a solid tumour of the adenoid variety, probably originating from the left ovary. Laparotomy revealed a solid tumour of the mesocolon; twelve centimetres of the large intestine were resected in removal of the growth. Death followed from shock. The methods of resection of the intestine before the profession are numerous, and it is likely to be some time before surgeons are agreed as to the best of them. The fact that new methods are being constantly suggested implies that the profession is not satisfied with those at present in use. Another point to be noticed in the case, besides the method of resection, is the employment of the gauze as an additional security against the spread of septic fluid into the peritoneum, which might occur in consequence of a possible leakage.

A woman forty-three years of age was admitted into Guy's Hospital under the care of Mr. Lane on Jan. 13th, 1894, having been sent to the hospital by Dr. Gibbon of Wisbech, under whose observation she had recently come. About four years previously the patient noticed for the first time that she had a lump on the left side of the lower part of the abdomen. Since that time it had increased steadily in size till it was as large as two closed fists. It caused her great pain by its very free mobility. During the last six months she had lost flesh rapidly and had been obliged to take a large amount of purgative medicine to keep her bowels opened. Unless this was done she suffered much from distension. On admission she was found to have a well-defined tumour, which was globular in shape and about six or seven inches in diameter. When she occupied the supine posture the tumour lay in the upper part of the left iliac fossa, but could readily be displaced in any direction for six or eight inches. The abdomen was full and flaccid, and it was obvious that she had at one time been very stout. The symptoms she complained of were the obstinate constipation and the pain, tenderness and dragging produced by the tumour. It was apparent, therefore, that the mass was a growth which had recently begun to encroach on the lumen of the bowel, and, probably from its position and mobility, the part involved was the sigmoid flexure about its centre. On Jan. 15th, an incision being made over the growth, which was then readily exposed, it was found to be a smooth tumour, globular in form and but slightly irregular, and situated in the meso-sigmoid. It extended outwards to the bowel, which was stretched over it and apparently involved by it for a length of ten or twelve inches. With some difficulty the tumour was removed by ligaturing the mesentery about it, and it, together with the portion of sigmoid involved, was cut away. Messrs. Down Bros. had made for Mr. Lane some buttons after the patterns designed by Dr. Murphy of Chicago, and as Mr. Lane was anxious to give them a trial he proceeded to use them in this case. The particular difficulty which he experienced in the use of the buttons was that the sigmoid was loaded with fat and the appendices epiploicæ were very large and bulky. He had, therefore, some difficulty in puckering up the peritoneal coat, especially of the proximal segment of the bowel, around the tube of the button. If the button had been much larger this difficulty could have been met much better, but it would also have afforded an obstacle to the perfect coaptation of the divided ends by any form of suture or appliance. Feeling that the presence of such an abundant quantity of fat exposed the patient to the risk of imperfect union, he wrapped the buttoned intestine in gauze and replaced it in the peritoneal cavity.

On Jan. 20th, five days after the operation, the gauze tampon was found to be moistened with pus, which had a fæcal odour. The gauze was removed and fresh material introduced. On the 27th the button was passed with a natural motion. Some fluid fæces were present in the wound. The wound gradually closed up, and, being homesick, the patient insisted on leaving the hospital on Feb. 28th, with a small fistulous tract which discharged a little pus. There had been no evidence of any fæcal matter in the discharge for a considerable time, so that the sinus will probably close very shortly. She gained flesh and strength very rapidly.

Remarks by Mr. LANE.—I was most pleased with the buttons, and hope that the next bowel on which I shall have an opportunity of trying them will contain less fat than this one did. Whether in all operations for establishing continuity of bowel it is wise to secure the patient from the possible yielding at the line of approximation, and consequent death from peritonitis, by the use of the gauze tampon is a matter of opinion; personally I use it freely in these and similar cases. At the same time it seems to me that the too early removal of the tampon may, by suddenly relieving the recently united bowel from external pressure, result in its yielding to the tension exerted by its contents. Apart from this, is it possible that matting of intestines around the tamponaded area may, at a subsequent period, produce risks of intestinal obstruction? In other words, does this form of treatment

[1] Journal des Sciences Médicales de Lille, 1892. Sajous, vol. iii., 1893, c. 60.

which secures the patient from immediate risk, expose him to another at a later period? On this point further information is requisite.

HOSPITAL FOR WOMEN, NOTTINGHAM.

A SUCCESSFUL CASE OF PORRO'S OPERATION.

(Under the care of Mr. H. R. HATHERLY.)

THE following very successful case of the advantages of the method of operation known as Porro's will be read with interest. By this method, as we need scarcely remind our readers, the child is delivered by the Cæsarean section, and then the uterus and its appendages are removed, the cervical portion only being left, as described below. Dr. R. P. Harris[1] gives in a paper some statistics of this operation which are of importance, and show its increasing success in skilled hands. The records for four years are as follow: 1885—24 cases, 7 deaths; 1886—23 cases, 4 deaths; 1887—18 cases, 5 deaths, 1 suicide; 1888—28 cases, 4 deaths Of the first 50 women out of the 264 cases recorded, 30 died as the result of the operation, and of the last 50 but 10—a reduction of the death-rate from 60 per cent. down to 20. Of the whole 264 women, 117 died from the operation, divided as follows: 74 out of the first half—that is, 132—and 43 out of the second 132. Thus it will be seen, under several forms of calculation, that Porro's operation of to-day, under proper management, is far less fatal than that of five years ago—in 1884, for example, when 17 women died out of 29, or nearly 58 per cent.

A woman twenty-three years of age was admitted into the Hospital for Women, Nottingham, on Jan. 14th of this year, being in labour at the full term of pregnancy. She was the wife of a dwarf, and had been exhibited in various towns with her husband, the two styling themselves "The Midgets." The husband, twenty-eight years of age, was 3 ft. 10 in. in height and weighed 7½ st. He married on Oct. 21st, 1891. His wife was 3 ft. 8 in. in height and weighed before her pregnancy 6½ st. She had suffered from rickets in early life, and when seventeen years old had been admitted into the Leeds Infirmary, where (judging from her statement) osteotomy was performed. She appeared to have made a good recovery from the operation. There was nothing unusual in her menstrual history, and she had no recollection of ever having had any illness, or of having required medical attendance except when at the Leeds Infirmary. Her parents are stated to have been healthy people of average height and weight. On admission she was found to have rickety curves of the femora and spine, and a much deformed pelvis, the antero-posterior diameter of which was less than an inch and a half. The cervix was slightly dilated, and the vertex could be distinguished. As pains were infrequent and slight it was decided to defer any operative measures until the following morning so as to obtain the advantage of daylight.

Jan. 15th.—At intervals during the night the patient has had pains. The position of the head is unaltered. A consultation was held by the staff, assisted by Dr. Roberts and Mr. Paul, and the conclusion arrived at was that nothing could be gained by delay, and that Porro's operation was preferable to any attempt at craniotomy, the difficulties of which would have been enormous, or to Cæsarean section pure and simple. Chloroform was administered by Mr. E W. Paul, the patient proving a good subject, and no anxiety was experienced throughout the operation on account of the anæsthetic. A median incision was made about seven inches in length; the abdomen was so distended that the skin appeared to be stretched tensely over the uterus and its contents. It was thought better under these circumstances to make a free incision, relying upon the contraction which would follow. At this stage of the operation hæmorrhage was very trifling and no ligature was required. On incising the uterus there was an alarming gush of blood, the placenta lying immediately under the incision. The child was removed with all speed and the placenta extracted, after which the immediate and rapid contraction of the uterus controlled the hæmorrhage almost entirely. The uterus being fairly contracted was withdrawn from the pelvis, transfixed and ligatured with stout silk in two parts immediately above the cervix. A clamp was then applied, and the body of the uterus, together with the appendages, was cut off as close to the clamp as practicable. The clamp being carefully secured and fixed externally the abdominal edges were brought together by interrupted sutures, the stump was freely dusted with iodoform, the wound was simply covered with iodoform wool, a firm bandage was applied, and the patient was lifted from the operating table on to her bed.

On the evening of the operation the temperature rose to 101 6° F. and the pulse to 110; she had some sleep and a little pain, but not of a severe character. The wound healed rapidly by first intention, except in the immediate neighbourhood of the clamp, where a little suppuration occurred. Recovery, with some unimportant fluctuations, was uninterrupted. A peculiar vesicular eruption occurred about a week after the operation all over the lower part of the abdomen, the vulva, and the inner sides of the thighs. This eruption speedily disappeared after the substitution of dry boracic wool for the iodoform dressing. The clamp did not separate until the sixteenth day after the operation, when the stump was found to be firmly incorporated with the surrounding tissues. The child, which is still living, was 19 in. long at birth and weighed 6¼ lb. It was a female child, the head and trunk being well formed, but the legs and arms seemed to be short in proportion. The mother did not suckle her child, and, although there were a little fulness of the breasts and a slight secretion of milk, no trouble of any kind ensued. The patient remained in the hospital altogether six weeks, although she was able to be up and dressed after a month. She is now in good health, able to walk about with ease and comfort and to carry her own baby.

[1] Sajous, vol. ii., 1891.

YORK COUNTY HOSPITAL.

LYMPHO-SARCOMA OF THE SMALL INTESTINE.—SARCOMA OF THE FEMUR.

(Under the care of Mr. JALLAND.)

LYMPHO-SARCOMA of the small intestine as a primary condition is extremely rare, and we must regard the growth in this instance as probably secondary to growth elsewhere. The second case is also an example of sarcomatous tumour. It is interesting as one of "acute traumatic malignancy," which was not submitted to operation. It was of extremely rapid course. A fortnight after a slight injury to the knee of a child in whose family there was a history of "internal cancer" a round-celled periosteal sarcoma developed and caused death through secondary affection of the lungs in less than three months. Operation in such cases may, perhaps, prolong life; it is not often that it cures the patient.

CASE 1. *Lympho-sarcoma of the small intestine.*—A boy aged six years was admitted to the York County Hospital on March 16th, 1893. He was supposed to have been kicked six weeks before admission and one week before the commencement of his illness. On admission the abdomen was found to be very enlarged, swollen, and tense, but not very tender to the touch. Down in the right iliac region a harder swelling was felt The lungs were in a condition of bronchopneumonia. On March 17th three separate lumps could be felt in both iliac regions. The urine contained a copious deposit of urates. The temperature ranged from normal to 100°F. On the 18th the child wandered considerably during the night. Perspiration was profuse, and he had offensive diarrhœa. On the 20th the lower half of the chest, one inch below the nipple on the right side, was dull on percussion. The breath sounds were almost absent, and the side did not expand on inspiration. The upper half of the abdomen was marked with large veins descending from the tissues over the lower half of the thorax. The lower half of the abdomen was singularly free from any trace of bloodvessels. The subcutaneous tissue was infiltrated with inflammatory material. The urine was scanty in amount, with a copious deposit of urates, and he had a good deal of pain on micturition. It was doubtful whether the tumours felt were inflammatory swellings or growths having some connexion with the bladder.

Mr. Jalland decided upon an exploratory operation. On opening the abdomen the peritoneum was found to be remarkably thickened. Serum, tending to be purulent, was allowed to escape and measured several ounces. In the iliac regions nodules could be felt, and as there was little doubt that the disease was malignant nothing more was attempted.

Post-mortem examination.—The omentum was immensely thickened, not with fat, but it was apparently hypertrophied. The appendices epiploices were universally enlarged. A large

mass was found in or towards the iliac fossa and extending to the hypogastric region and to the top of the bladder. It was seen to involve the ileum about 2 ft. 6 in. from the ileo-cæcal valve; this part of the gut was united by the mass to the bladder, and the growth extended laterally along both lateral ligaments of the bladder to the pelvic walls. The mass completely surrounded, but did not occlude, the gut. On section the growth was found to be white yellow and felt soft at parts and hard at other parts. The pre-vertebral glands in the abdomen and on the surface of the diaphragm were involved. The left kidney was not increased in size, but on section showed a nodule of growth about the size of a pea. It was somewhat congested. The right kidney was enlarged, showing on its surface a number of small nodules, and the same on section. The structure was pale and only injected in parts, and it presented the appearance of "thrush's breast," as seen in fatty condition. The spleen was injected, not softened, and showed a suspicious soft nodule. The liver was enlarged, showed on its anterior margin a mass the size of a walnut, and was white-yellow on section; on its edge there was another growth, and there were several on its under surface, two of which were distinctly umbilicated. The lungs were in an early stage of red hepatisation and hypostatic congestion. The heart was atrophied, but otherwise normal.

Microscopic examination showed that the tumour and other growths were of the nature of lympho-sarcoma.

CASE 2 *Sarcoma of the lower end of the right femur; death.*—A girl aged thirteen was admitted into the York County Hospital on Aug. 17th, 1893. The father had died of internal cancer. The mother was alive and well. She had three sisters and one brother, who are healthy. She noticed nothing wrong with the knee until six weeks before admission. About ten weeks ago she fell downstairs and hurt her right knee, which began to swell about a month ago, and she had to go to bed. A week after the injury she painted it with iodine. The swelling had gradually increased since. On admission to hospital there was considerable enlargement of the right knee, the swelling being chiefly confined to the lower part of the femur. The popliteal space was nearly blocked up; the swelling was hard, except near the patella, where there was a little softening. There was some enlargement of the lymphatic glands in the groin. There was also atrophy of the calf and thigh muscles; the temperature was 99·6° F. On Aug 20th, as the swelling was increasing, a hypodermic needle was passed into it, and the contents were examined under the microscope; these showed unmistakable evidence of sarcomatous growth. Amputation at the hip-joint was strongly advised. On Sept. 6th the patient left the hospital, the mother having absolutely refused to have any operation performed. On Oct. 7th she was readmitted into the hospital. The girl was now very much emaciated. The growth had greatly increased in size and extended from below the knee up to the junction of the upper and middle third of the thigh. Its general outline was fusiform. Over the surface there were large dilated veins; the skin was shining and atrophied. Considerable enlargement of the glands in the groin was present. There was also œdema of the foot and leg. On Oct. 19th she had a tiresome cough, with expectoration. Examination showed some dulness at the right base. Vocal fremitus and vocal resonance were diminished. The breath sounds were impaired. On the 20th dulness was more marked. She had physical signs of pleurisy, with effusion. An aspirator was introduced, and a quantity of bloody fluid was removed, which gave temporary relief, but she died on Oct. 24th.

Post-mortem examination on Oct. 25th.—Externally, there was extreme emaciation of the whole of the body except the diseased limb. The right lower extremity presented an enormous tumour, extending from the upper third of the thigh to the junction of the upper and middle third of the leg. There was marked dilatation of the superficial veins of the whole limb, with œdema of the leg and foot. The skin in the region of the joint was discoloured and thickly studded with portions of new growth. Some were quite free in the subcutaneous tissue, others were attached to the deeper portions of the tumour. Over the position of the external condyle ulceration of the skin from pressure had occurred. Internally there was found a quantity of blood-stained fluid in both pleural cavities. The parietal pleura on the right side was thickly covered, almost all over, with small masses of new growth, very hard in consistence; this was especially marked on the under surface of the sternum. The parietal pleura of the left side was much the same. The visceral pleura of both lungs and also the pleura covering the pericardium were likewise covered with new growth. Both lungs were thickly studded with masses of new growth from the size of a pin's head to that of acorns. Some of the larger masses in the right lung had broken down into caseous material in the centre, with hard, calcified walls; others were of a cartilaginous character. The mediastinal glands were affected, and a large mass in the perichondrial tissue had undergone mucoid degeneration. The heart was decidedly small and atrophied. The liver was large and somewhat nutmeg in character. Nothing abnormal was detected in the kidneys. The spleen was healthy. Under the microscope the growth presented the appearance of a round-celled sarcoma.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Two Cases of Retained Testis presenting points of Special Interest.—Intestinal Obstruction.—Entire Ablation of Male Genital Organs.—Supra-pubic Sounding and Supra-pubic Cystoscopy.—Multiple Urethral Papillomata.—Unilateral Paralysis of Sterno-mastoid, Trapezius, and Face.—Cutaneous Nævus of Cheek treated by Electrolysis.—Osteitis Deformans.

A CLINICAL MEETING of this society was held on April 16th, the President, Sir WILLIAM B. DALBY, being in the chair.

Mr. C. B. KEETLEY exhibited two cases of Retained Testis, illustrating a new mode of operating. The testis, after being thoroughly freed from its fibrous attachments in the inguinal canal, was brought down, and, two skin wounds being cut in the scrotum and neighbouring part of the thigh respectively, these wounds and some of the fibrous tissue always found attached to the testis or epididymis were sutured together, the sutures piercing the tunica vaginalis. In one of the cases shown the testis had been without inconvenience left united to the thigh for five months. In both a hernia had been operated on for radical cure simultaneously, and in one an umbilical hernia also. The surgeon could, of course, ultimately separate the testis from the thigh.—Mr. SWINFORD EDWARDS remarked that in the elder of the two subjects shown the testis was much atrophied, and he thought it would have been better to have removed it altogether at the time of the operation. He wondered if such an organ could recover its natural size and function.—The PRESIDENT hoped the patient would be shown two or three years later in order that the condition of the testis might then be observed.—Mr. KEETLEY, in reply, said that the testis had already grown since it had been down. There was positive evidence to show that retained and atrophied testes were not always functionless, especially when brought down in youth, and the patient, if consulted, preferred as a rule to retain them. The question of retention of the testis was a minor one from an operative point of view, for on each of the patients an operation for radical cure of hernia had also to be performed. If the testis were to be left it was important to very thoroughly free the sac from the cord in the operation for radical cure.

Mr. GOODSALL exhibited a patient, a female aged twenty-seven, who had suffered from Intestinal Obstruction; left inguinal colotomy was performed, and three years later, the cause of the obstruction having been removed, the colotomy opening was closed. He first saw the patient in consultation with Dr. G. T. Penny on Dec. 19th, 1890. Her illness had lasted for ten months. At first she was treated for ovaritis (right side), later for fibroid of uterus and in November, 1890, for pelvic cellulitis or abscess. When he saw her the bowels had not been relieved for eighteen days; there was and had been constant vomiting for forty-eight hours, with very severe pain in the lower part of the abdomen. The rectum was empty; the abdomen was not distended with flatus. The transverse colon and the sigmoid flexure were dull on percussion, but the right iliac region was resonant. Hard fæces could be felt in the transverse colon. On Dec. 20th, 1890, the patient was admitted into the Metropolitan Hospital under his care and left inguinal colotomy was performed. The sigmoid flexure was so full of hard motion that it could not be brought through the

abdominal incision. Its front surface was, therefore, sutured to the sides of the incision. Twenty hours later the colon was opened by a longitudinal incision about one inch in length; the sides of this opening were drawn out and sutured to the skin about half an inch outside the upper and lower border of the abdominal incision. The bowels acted through the opening and the vomiting ceased. On the following day, Dec. 21st, fæces passed into the rectum as well as through the colotomy opening. In June, 1891, the first attempt was made to close the opening into the colon, but failed, as did two other attempts, because of the sickness caused by the anæsthetic. On Oct. 17th, 1893, an exploratory examination was made to find out the cause of the intestinal obstruction preparatory to making a fourth attempt to close the opening into the colon. A band of omentum was found passing loosely over the lower part of the sigmoid flexure of the colon and adherent to the front wall of the pelvic cavity. This band was ligatured at both ends and removed. After this operation the patient had scarcely any vomiting from the anæsthetic. Early in December a fourth attempt was made to close the opening into the colon. No vomiting was caused by the anæsthetic, and the opening into the colon had remained closed since the operation. The bowels now acted regularly per rectum. Menstruation, which had always been more or less irregular and painful, was now quite regular.—Mr. SWINFORD EDWARDS asked what efforts had been made to close the colotomy wound on the first three occasions.—Mr. GOODSALL, in reply, said that the first time he pared the edges widely and then closed with sutures; the second time he again closed with sutures and held the edges together with harelip pins, but they nearly cut out and had to be removed; the third time he applied strapping, but this did not hold.

Mr. HURRY FENWICK showed a patient aged thirty-nine, of healthy antecedents and non-syphilitic history, from whom he had removed the testicles, scrotum, and penile structures down to the perineum. The patient had been suffering from advanced epithelioma of the penis, which had rapidly passed backward along the corpora cavernosa and spongiosum. An oval incision was carried from the pubis to the anus, the spermatic cords tied on each side, the crura of the corpora cavernosa detached from the rami, the urethra cut transversely at the opening of the membranous urethra, turned into the perineum, and stitched there. The entire wound healed by primary union. The operation was a modification of the Thiersch-Gould operation.

Mr. HURRY FENWICK then demonstrated a Straight Cystoscope which slid inside a straight supra-pubic cannula. He suggested that in some cases of much enlarged prostate, in which there was a suspicion of calculus, sounding by means of a supra-pubic aspirator trocar pilot would not only be more certain of touching a stone embedded behind an upraised collar or median lobe, but would be much less liable to cause hæmorrhage, cystitis, and urethral fever than the ordinary urethral sound. In those cases in which it was proposed to drain the bladder supra-pubically and leave in a rubber tube, or in those cases in which the ordinary cystoscope was indicated, but was useless on account of the projection of an enlarged prostate, the straight cystoscope he had made could be passed inside the supra-pubic cannula, and the interior of the bladder examined by electric light after the supra-pubic puncture had been made into the full bladder.

Mr. HURRY FENWICK likewise showed a number of Papillomatous Growths which he had removed from the penile urethra of a young man who had suffered from intractable gleet and vesical symptoms for two years. They were discovered by electric urethroscopy, and each growth was removed through the cannula by scraping.

Dr. LEWIS JONES exhibited a young woman aged nineteen with Paralysis of the Right Sterno-mastoid and Trapezius, together with facial paralysis and deafness of the same side. The history of onset was very indefinite; it seemed to have been gradual and accompanied by pains in the shoulder fifteen or eighteen months ago. There were no clear indications to suggest the cause; the association of paralysis of the seventh cranial and spinal accessory nerves was unusual; the soft palate was normal.—The PRESIDENT regretted that no more definite history had yet been obtained. In these cases of facial paralysis the onset was rarely gradual, but when it was gradual the cause was usually malignant growth.—Dr. BEEVOR commented on the rarity and interest of the case. There was commonly associated paralysis of the soft palate, vocal cord, and tongue, but in this instance the palate and tongue were not involved. As to the seat of the lesion, he thought that there must be two tumours placed alongside the medulla, pressing on the facial, auditory, and spinal accessory nerves. As the soft palate was not paralysed it showed that the vagus accessory was not affected.—Dr. GUTHRIE inquired whether the chorda tympani nerve was affected. He regarded the condition as possibly produced by a single lesion of the nature of a bone inflammation, extending from the mastoid downwards towards the foramen magnum.

Dr. LEWIS JONES then brought forward a case of Superficial Cutaneous Nævus of the Cheek, occurring in a boy aged eighteen, which was treated by repeated punctures with the negative pole of the battery. Most of the nævus was now obliterated, and there was no perceptible scarring, although with a lens the minute marks left by the punctures could be made out. The puncturing had been done in a disseminated way, and at twelve sittings at intervals of fourteen days or more to avoid undue injury to the skin.

Dr. GUTHRIE showed a woman aged sixty-two who was the subject of Osteitis Deformans. Twelve years ago she had injured her right thigh whilst entering a railway carriage, causing a swelling and large bruise to appear. From this time she had had more or less constant pain in the thigh of a shooting, aching character, going up into the right side of the abdomen and down into the leg. She was not certain that the pain had not preceded the injury, but was positive that it had been much worse ever since. Six years later the front of both legs below the knees became tender and painful, and at about the same time the limbs began to bend in the following order: (1) right thigh; (2) left leg below the knee; and (3) right leg below the knee. Three years ago pains began in the right arm and forearm, but no swelling or deformity had resulted. Recently she had commenced to stoop from the onset of upper dorsal curvature. Her pains were increased at night, much disturbing her rest, and also were increased by walking. She suffered much from cramps in the gastrocnemii of both legs. She had been delicate as a child, but had had no severe illness since childhood. She had never had syphilis, acute rheumatism, or acute gout; but her pains had been regarded as rheumatic for many years, and the distal phalanges of the fingers in both hands were nodular. She had had three children, two of whom were alive and healthy; one sister was alive and healthy; an aunt had been bedridden for many years with rheumatism. There was no family history of cancer or any indication of cancer in the patient; there was no family history of osteitis deformans. Her present condition was as follows. The cranial and facial bones were unaffected. The thorax was somewhat flattened and square in front; expansion was fair. There was no fixation or thickening of the ribs. There was an antero-posterior curvature of the dorsal spine. The left clavicle was delicate and of normal shape, the right somewhat thickened. The bones of the arms and forearms were thin and delicate, the hands and feet small. The distal phalanges of the fingers showed Heberden's nodes. The pelvis was flattened from before backwards and widened laterally, the anterior superior iliac spines being 11½ in. apart. The lower extremities were bowed outwards in the form of a hoop. She could not bring her knees within five and a half inches of each other without crossing her feet. The right femur was much thickened and curved outwards and forwards. The left femur was little, if at all, affected. Both tibiæ were much thickened and felt nodular, and were curved outwards and forwards, particularly the left. The right leg was nearly an inch shorter than the left. On walking she was compelled to turn the right foot out in order to avoid tripping over the left. The chief point of interest in the case was the absence of affection of the cranial bones and of the clavicles. The patient attributed her illness to the injury received twelve years ago, and if this were so the case afforded strong evidence of the infective character of the disease, which would thus be analogous to the more acute and dangerous inflammations of bones which occasionally followed injury to a single bone in younger subjects.

CLINICAL SOCIETY OF LONDON.

Pelvic Enchondroma.—Strangulated Femoral Hernia complicated by Volvulus.—Myocarditis.—Abscess of Spleen.—A more effectual and scientific treatment of Fractures of the Tibia and Fibula.

AN ordinary meeting of this society was held on April 13th, Dr. DUFFIN, Vice-President, being in the chair.

Mr. G. R. TURNER read notes of a case of Pelvic Encho-

droma. The patient, a man aged fifty, was admitted into St. George's Hospital in March, 1890, with a tumour of eight years' growth. It was a large globular swelling on the inner aspect of the left thigh, extending into the perineum and groin. The circumference of the left thigh over the tumour was twenty-nine and a half inches, as compared with nineteen inches on the right side. The hip-joint and thigh moved freely, and were not implicated in the growth, which was attached to the rami of the pubes and ischium by a broad hard base. The patient was shown at the Clinical Society on March 14th, 1890, and the general opinion was that it would be very inadvisable to attempt to remove the tumour. In 1892 the tumour had steadily grown, and had extended into the perineum and ischio-rectal fossa, so as to press on the urethra and rectum, interfering very materially with micturition and defæcation. On these grounds, it was decided at all hazards to try to remove it. This was eventually done by cutting through the mass of the growth and removing it in halves after an ineffectual attempt to get at the base. The enchondromatous mass removed weighed upwards of seven pounds. The man made a good recovery, although a small portion of the thin stretched integument sloughed.

Mr. R. W. PARKER related a case of Strangulated Femoral Hernia complicated by Volvulus, with especial reference to the continuation of obstruction after herniotomy. He also desired to elicit from members of the society the treatment most appropriate to this condition. His patient was a woman aged forty-four, who came under treatment on the sixth day of strangulation. She was very ill. Herniotomy was performed, and as the gut was gangrenous an artificial anus was made, but no fæces escaped. Sixteen hours later, the abdomen being more distended, laparotomy was done. A volvulus was discovered and adjusted, immediately after which fæces began to flow from the artificial anus. The woman, however, died in about twelve hours.—Mr. BARKER said that the paper brought out one of the many difficulties which might be met with in cases of intestinal obstruction. From experience gained from both the living and the dead one was forced to conclude that a very small amount of twist would suffice to effect complete obstruction of the intestine, and if this was really so it ought to make the possibility of cure by surgical interference the easier. Under these circumstances there should be no hesitation in opening the bowel in order to afford the necessary relief. Though the precise nature of the obstruction might often remain in doubt, yet whatever its nature was it might be dealt with by abdominal section, the incision being placed preferably in the middle line. Surgical measures, to be successful, should be had recourse to early in the case, and he had never known a surgeon who had regretted intervening too early. He did not believe it was advisable to allow the bowel to escape from the peritoneal cavity during the operation, and he asked why this course had been adopted in the case under discussion.—Mr. PARKER, in reply, said that he was obliged to allow the intestine to escape in order to arrive at a diagnosis of the nature of the obstruction. He agreed that a very slight twist would bring about complete obstruction and that such a twist could be easily remedied by operation. The patient whose case he had related had been operated on within an hour of admission.

A paper by Dr. MACLAGAN on Cases of Myocarditis was then read. It was a record of three cases in which inflammation of the muscular substance of the heart occurred in the course of acute rheumatism, without accompanying endo- or peri-carditis, and in which the disease was diagnosed. In one which proved fatal the cardiac muscles were found to be dark, soft, and easily broken down by pressure between the finger and thumb. The points insisted on were the absence of any special physical signs by which myocarditis could be diagnosed, and the presence of delirium of a low type, and of muscular tremors which gave the appearance of one suffering from delirium tremens. The gravity of the delirium as a symptom occurring in the course of acute rheumatism was pointed out. The complications to which it was generally due were hyperpyrexia, myocarditis, pericarditis, and pneumonia. In hyperpyrexia there was the high temperature to decide the diagnosis; in pericarditis and in pneumonia there were the physicial signs. It might be stated generally that delirium occurring in the course of acute rheumatism which was not due to one of these complications was symptomatic of myocarditis. Attention had been called by various writers to the occasional occurrence of sudden death in acute rheumatism. It was probable that latent myocarditis was the cause of such deaths. In one of the cases given death was sudden.—Dr. DUFFIN said that when certain symptoms were present the existence of primary myocarditis should be more frequently considered in the diagnosis. He agreed that it was of primary importance to administer diffusible stimulants, but he was not sure that it was wise to administer the salicylates. He approved of the treatment suggested by Sir Alfred Garrod—namely, the administration of a combination of alkalies and quinine.—Dr. HALE WHITE said that the possibility of the occurrence of myocarditis as a complication of acute rheumatism had been acknowledged for a long time, and it might be associated with either pericarditis or endocarditis. The cases which had been related were the more interesting because they were free from complication. The salicylates should be cautiously administered in well-marked myocarditis; he knew of one case in which the commencement of the administration of only a moderate dose of the salicylates marked the beginning of a downward course of the disease.

Professor FINLAY contributed a case of Abscess of the Spleen. The patient was a domestic servant aged twenty, admitted into the Aberdeen Royal Infirmary, under his care, on Oct. 7th, 1893. The family history was unimportant. As to personal history, she had been delivered of a child in the previous April, since when her health had not been good. Three months before admission she had an attack of pleurisy with which she was laid up for about a week. The attack for which she sought admission began on Sept. 28th, and consisted of pain in the left side with shivering and sickness. On admission she complained of pain and difficulty in breathing, with a short, dry cough. The symptoms and physical signs generally were suggestive of pleurisy with effusion, but the maximum cardiac impulse was found in the third interspace well within the nipple line, the sounds being loud and slightly roughened, but otherwise normal. Two days after admission it was noted that the pain in the right side had been severe and the temperature had reached 103° F. on one occasion and 105° on another. Further fluctuation in the temperature and occasional sweatings led to the belief that the supposed effusion was purulent, and on Oct. 13th the exploring syringe was used, being introduced in the eighth interspace below the inferior angle of the scapula. Only a few drops of blood were withdrawn. Subsequently, four other exploratory punctures were made in various situations with negative results. She gradually lost strength and became anæmic and emaciated. Ultimately she had attacks of delirium, the abdomen was distended and tympanitic, and she complained of pain in the head extending down the neck. She gradually sank and died on Nov. 21st. At the post-mortem examination the spleen was firmly bound to the diaphragm and surrounding parts by adhesions, and at its anterior end, capsuled with adhesions, there was a collection of thick greenish pus about the size of an orange. On section, the lower bud of the spleen was found to be the seat of several abscesses containing curdy pus communicating with the purulent collection just described, the remaining two-thirds of the organ being healthy. The uterus and other pelvic organs were healthy, as was also the heart; but the right lobe of the liver was riddled with abscesses varying in size from a pea to a walnut, and the left pleura contained about two ounces of blood-stained serum, the base of the left lung being adherent to the diaphragm. The case at its commencement so strongly suggested purulent effusion that it was a matter of surprise that so many exploratory punctures failed to reveal any; the only alternatives which suggested themselves being malignant disease of the lung and subphrenic abscess. The presence of certain points as regarded the former, and the absence of others as regarded the latter, rendered either of these alternatives improbable, and beyond the diagnosis of suppuration from the rigors, course of temperature and sweating, no conclusion was arrived at. As to the etiology of the splenic abscess this was altogether obscure. Possibly an injury, or some septic condition connected with the pregnancy, the evidence of which had disappeared, might have accounted for the beginning of the disease in the spleen; the abscess in the liver was obviously secondary.—Dr. DUFFIN referred to a case which had recently come under his notice of acute abscess of the spleen. A girl aged eighteen was admitted to the hospital with pleurisy at the base of the left lung, and there was some dulness at the corresponding apex, which was at the time considered to be tuberculous. Within two days she was attacked with an agonising pain along the course of the

eighth rib, which compelled her to lie perfectly still. She lay on her back with the left leg drawn up; there was great tenderness on palpation of the left hypogastrium, and this was followed by a sensation of nausea. The case proved fatal about ten days afterwards, and at the necropsy ulcerative endocarditis was found with a spleen one and a half times larger than normal and bound to the diaphragm by adhesions. Two small abscesses were located in the upper part of the spleen, and above there were extensive pleural adhesions.

Mr. ARBUTHNOT LANE gave an account of some cases illustrating a more effectual and scientific treatment of Fracture of the Tibia and Fibula than that in common use. He asserted that the receipt of such an injury as an oblique simple fracture of the tibia and fibula too often entailed on the skeletal machinery of the individual an enormous financial depreciation of its value, and in not a few absolute ruin, since a considerable portion were incapacitated from pursuing their usual occupations, and were obliged to follow other and usually less remunerative pursuits, whilst others were so unfitted for work as to be thrown on the rates or rendered dependent on charity. He believed that the average financial depreciation of the labourer as a machine amounted in such injuries to nearly as much as 70 per cent. of his original value, which, if true, was simply disastrous. This he ascribed as being due to an alteration in the lines of pressure through the several joints of the lower extremity, resulting from the somewhat complicated deflection of the lower fragments from their original relationship to the upper. In consequence of this alteration in the manner in which pressure was transmitted, insecurity and pain were experienced in the several joints, this being most marked in the articulations of the ankle and foot, and increasing with the age of the individual. Pathologically this was represented by a progressive mechanical arthritis in the several joints. Other conditions, as œdema, eczema, and ulceration, might exist in consequence of the limited action of the muscles and joints. Such being the case, Mr. Lane argued that to pursue the present mode of treatment was highly improper, since by operative measures entailing a minimum of risk to the life or limb of the patient the fragments could be brought into apposition and so retained with perfect accuracy, with the result that the skeletal mechanics of the individual remain as perfect after the injury as they were before. This result was brought about by cutting down on the fracture of the tibia and exposing the broken ends freely, removing any soft parts or fragments of bone intervening between the sectional surfaces, bringing these surfaces into accurate apposition, partly by traction on the foot, partly by means of elevators, and partly by means of lion forceps, by which last instrument apposition was continued till holes had been drilled and the bony surfaces brought together immovably and most forcibly by the introduction of steel screws. Such operative measures at once relieved the patient from the pain which might result from the movement of the fragments on one another and from the tension and discomfort due to the extensive extravasation of blood between and into the tissues; they shortened the duration of the period during which the man was incapacitated from earning a living, since bony union was rapid and perfect, and, what was of most importance, they left his skeletal mechanics in the condition in which they were before the accident. Mr. Lane then read the notes of three cases which he had operated on in the same week. In them the results obtained by operative interference were extremely satisfactory, since the fragments had been retained in accurate apposition and had united perfectly, the outline of the bones being normal. He pointed out that even when the fracture was thoroughly exposed the surgeon might experience the greatest difficulty in obtaining accurate apposition of the fragments, but he believed that with the judicious application of traction to the foot, combined with the use of elevators, lion forceps, and steel screws, in but a very small proportion of cases would the surgeon fail to obtain perfectly accurate apposition, and in that small number the displacement would be very trifling indeed. In the face of these facts he considered that a surgeon was not treating such fractures properly if he confined himself to making use of manipulation and splinting without first informing the patient fully of the imperfect mechanical condition which would very likely result and did not urge strongly on him the immense advantages he would derive from operative interference, the risks connected with which were very small.—Mr. Lane's paper was supplemented by a brief account of forty cases collected by Mr. F. J. Steward, which fully bore out the truth of the statements made. Mr. HORATIO SYMONDS remarked on the most unsatisfactory nature of the results obtained when oblique fractures of the tibia and fibula were submitted to the ordinary treatment. He had driven in pegs, wired the fragments, and, in place of the ordinary back splint, had used Thomas's knee-splint, fixed with the three-cornered bandage. He believed that great harm followed the use of the ordinary vertical foot-piece.—Mr. PEARCE GOULD remarked that he had been hitherto ignorant of the fact that simple fracture of the tibia and fibula was attended by such serious results, which, if they were really common, made it incumbent on surgeons to devise some more efficacious plan of treatment. There was, nevertheless, great risk associated with the conversion of an ordinary simple into a compound fracture, especially as the treatment of most cases fell into the hands of general practitioners.—Mr. LANE, in reply, contended that the risks were actually as stated, and he added that when he asked Mr. Hulke what his estimate was of the diminution of the financial value of men who had suffered this injury his reply agreed with the estimate he himself had made—namely, from 70 to 80 per cent.

PATHOLOGICAL SOCIETY OF LONDON.

Epithelioma of Bladder, involving entire Urethra.—Sections of Skin after Grafting by Thiersch's Method.—Melanotic Sarcoma of Rectum.—Fibrous Naso-pharyngeal Polypus.—Ectopia Vesicæ.—Aberrant Renal Vessels as a Cause of Hydronephrosis.—Gangrene of Lung from a Syphilitic Patient.

AN ordinary meeting of this society was held on April 17th, the President, Dr. PAVY, being in the chair.

Mr. CHARTERS SYMONDS showed a specimen of small squamous-celled Epithelioma of the Bladder, involving the Entire Length of the Urethra. The patient, a man aged forty-eight, was admitted into Guy's Hospital in September, 1893, suffering from hæmaturia, which had existed off and on for six months without any inconvenience till six weeks before admission. He then had frequent and painful micturition, passing much blood. The urine was bright with blood, but was acid. A tumour could be felt above the pubes. Sounding gave rise to free bleeding. Perineal cystotomy was performed on Sept. 18th, and a large quantity of growth removed, probably eight ounces or more. The site of attachment was near the orifice of the left ureter. Immediate relief followed the operation for a few days; then rapid extension of the growth took place, some glands in the groin previously infiltrated suppurated, and the perineal wound became infected. When the patient was put under ether for incision of the inguinal swelling it was found that the urethra was completely destroyed in the perineum, and that growth could be squeezed from the meatus. The urethra itself at the meatus was involved in the growth, which fungated from the orifice. The man died on Oct. 8th from septic infection, with secondary growths in the lung and the liver. The points referred to were the rarity of such extensive disease of the urethra; the enormous size of the growth, so large that it could be felt above the pubes; the absence of any serious symptoms till within ten weeks of death; and the robust and perfectly healthy appearance of the man at the time of his admission into the hospital.—Mr. TARGETT said that the cyst formed at the back of the bladder was of interest; the muscular coat had become perforated, and urine had escaped through it, pushing the recto-vesical fascia before it and thus displacing the vasa deferentia and vesiculæ seminales. Hydatid cysts in this position led to a similar displacement of these structures.

Mr. L. BIDWELL and Dr. ABRAHAM showed Sections of Skin after Grafting by Thiersch's Method. Although this method was now frequently adopted in this country, they were not aware that sections showing the growth of the new skin had been exhibited to the society. The graft from which these sections were taken was implanted after excision of a patch of lupus by Mr. Bidwell in December, 1892. Not more than two-thirds of the graft became united, the rest of the wound healing by granulation. A portion of the new skin was removed in August, 1893, for a slight recurrence of the lupus at the margin, nine months after the first operation. Some of the sections included (1) portions of the original skin, (2) skin formed after healing by granulation, and (3) that formed by Thiersch's graft. In the last a

definite cutis was seen, with a free development of papillæ. The connective tissue was of immature cellular type, and there was an extensive infiltration of small cells. No formation of hair or sebaceous glands had yet appeared to have taken place. In these (Thiersch's) grafts the tips of the papillæ were planted on the denuded surface together with the rete mucosum; this led to the development of a new cutis and so explained that absence of cicatricial contraction which was characteristic of the method. The sections had not been prepared to exhibit the nerves, but Mr. Bidwell had found that the cutaneous sensibility became almost normal. The sections well showed the mode of infiltration of the lupous growth: the nodules had appeared principally in the granulation tissue, at the junction of the graft with the old skin, and the smaller ones evidently occupied lymph spaces. The neighbouring bloodvessels were more or less surrounded by collections of small cells, which extended for a considerable distance away from the nodule. This illustrated how important it was that in the treatment of lupus the neighbouring, apparently healthy tissue should also be freely dealt with in order to retard recurrence.

Mr. GEORGE HEATON showed a Rectum the seat of a Primary Melanotic Sarcoma. The specimen was taken from a male, aged forty-eight, who had had rectal troubles for twenty-five years. The main growth was a polypoid mass growing from the posterior wall of the intestine, about one and a half inches from the anus, lobulated and ulcerated on its surface, and deeply pigmented in places. There were several similar growths higher up the rectum, and the post-rectal glands were infiltrated with a likewise similar growth which was invading the rectal walls from them. There was one small secondary nodule in the liver. Microscopic sections of the main tumour and drawings were also shown.—Mr. BOWLBY said that growth of melanotic sarcoma from the rectal mucous membrane was rare. He knew of but one other specimen, and in that the growth extended as in the skin, missing certain areas of mucous membrane and reproducing itself in patches higher up. In two other cases involving mucous membrane, one began in the palate and one in the gum; their progress was very slow, there was but little tumour growth, and there was no evidence of lymphatic infection. He had never seen a melanotic sarcoma of the eyeball infect the lymphatic glands.—Dr. NEWTON PITT said that Dr. Fagge had pointed out that the anus was one of the sites to examine when in search of a primary melanotic growth. Melanotic sarcoma was not infrequent in grey horses.—Mr. SHATTOCK remarked that when melanotic sarcoma occurred in horses the primary growth was commonly at the anus.—Mr. HEATON, in reply, agreed that when a mucous surface was the seat of the primary growth lymphatic gland infection was unusual.

Mr. GEORGE HEATON likewise showed a Fibrous Naso-Pharyngeal Polypus which was spontaneously expelled by a patient. It weighed two ounces and a quarter, and in circumference it measured three inches by two and a half inches.

Mr. S. G. SHATTOCK showed two specimens of Ectopia Vesicæ. In the first he demonstrated that the muscular wall of the bladder was firmly attached to the posterior surfaces of the separated pubic bone. Since first observing this he had carefully dissected three other specimens, one of these being from an adult male, and another from an adult female, and the same disposition held true in all. Anatomically the attachment corresponded with that of the normal pubo-vesical muscles, but it was greatly more pronounced. He pointed out that as the bladder was no longer a hollow viscus it ceased to have any expulsive function; nevertheless, in place of atrophy, the muscular tissue underwent hypertrophy. This result he considered due to the resistance it offered to hernial protrusion of the intestines, the vesical wall forming really part of the abdominal parietes. There might be also the factor of separation of the pubic bones, but the first reason was doubtless the chief. The longitudinal fibres, pubo-vesicales, would especially undergo hypertrophy, since their attachment to the bones would enable them to act at the most advantage in resisting hernial protrusion. In another preparation was shown by dissection the relative position of the corpus spongiosum and corpora cavernosa in epispadias associated with ectopia vesicæ. The corpus spongiosum was diminished in length, but not so the cavernosum, which was thrown into an S-shaped curve beyond its attachment to the pubic ramus. On meeting the side of the corpus spongiosum the corpus cavernosum proceeded forwards on the outer aspect of the latter, but the penis was, in these cases, so short that by the time it reached the base of the glans it still lay by the side of, and never surmounted, the corpus spongiosum.—Mr. SYMONDS said that he had recently met with difficulty in separating the bladder-wall from the pubic bone when operating for ectopia vesicæ.

Dr. NEWTON PITT showed three specimens of Hydronephrosis due to Aberrant Renal Vessels. 1. There was a descending branch of the renal vein which ran behind the pelvis, and round which the ureter was obstructed. 2. A descending branch of both artery and vein ran behind the pelvis—the artery in front of the vein—and round the former ran the ureter. 3. He also referred to a case in which a descending branch of the vein ran behind the ureter and obstructed it. 4. The ureter was obstructed by a descending branch of the artery which ran behind the pelvis. The results of the observations of the Collective Investigation Committee of the Anatomical Society on the variations of the renal arteries were referred to, but information upon the abnormalities of the veins was still required; in one-third a vessel ran behind the ureter. Practically it might be possible to relieve these cases, when an exploratory operation was being performed, by ligaturing and dividing the aberrant inferior vessel, which ran behind the pelvis and obstructed the ureter. It appeared that when the vessels divided some distance from the kidney, especially when they ran posteriorly to the pelvis, a very slight distension of the pelvis might by pressing the ureter against the vessel lead to complete obstruction and hydronephrosis. This cause of hydronephrosis was by no means very uncommon.—Mr. SYMONDS asked whether the opening into the ureter was of the normal size.—The PRESIDENT remarked that the ureter, as a muscular tube, resembled the intestine and, like it, was liable, if twisted or compressed, to become obstructed.—Mr. TARGETT said he had dissected two of these cases, but he did not think that the vessels were the active cause of the obstruction, for they were not adherent to the dilated ureter, and there was no groove like that caused by a constricting band.—Dr. CHARLEWOOD TURNER said that there must have been some cause to have initiated the hydronephrosis, which was probably not congenital.—Dr. PITT, in reply, said that in one case it was clear that the vessel was the cause of the hydronephrosis. He maintained that the position of the aberrant artery was usually such that any temporary slight distension might lead to a destructive and permanent hydronephrosis. These cases helped to explain the intermittent hydronephroses which could be emptied by manipulation.

Dr. HABERSHON showed a specimen of Gangrene of the Lung. The patient, a man aged thirty-two, had been in good health (except for an attack of syphilis, for which he was treated for eighteen months) until January, 1893. The onset of the disease was insidious and accompanied by gradual emaciation, with cough and expectoration. On Feb. 6th he was admitted to the Middlesex Hospital with offensive breath and sputum and some signs of consolidation of the upper part of the left lung and the lower part of the right. Rapid signs of excavation supervened, the disease advancing towards the bases, but especially on the right side. An exploratory puncture revealed pus, and in June a portion of one of the ribs was resected. Very little pus, however, was obtained from the lung cavity. He was transferred to the Brompton Hospital in June under Dr. Fowler's care, where he exhibited well-marked signs of gangrene of the lung with great fetor of expectoration and of the discharges from the wound. The patient was extremely prostrate and died a few days after his admission. There was no family history of phthisis. At the necropsy the right lung was found to be firmly adherent posteriorly, the pleural cavity being obliterated and its layer thickened. The extreme apex was fairly healthy, though emphysematous, but the whole posterior two-thirds of the lung presented the appearance of a series of radiating cavities surrounded and separated from each other by dense indurated tissue of a black or bluish-grey colour, sharply defined from the more healthy anterior part of the lung. The cavities were filled with shreddy greenish-yellow slough, with the intense fetor of gangrene. They were not trabeculated and were irregularly oval or round in shape. In the fibroid pigmented walls were seen a few small areas of necrosis. The anterior part of the lung was the seat of a patchy broncho-pneumonia. The left lung presented similar diffused areas of broncho-pneumonia, with a few small suppurating points (apparently of septic origin), especially in the lower lobe, in the centre of which was a

large gangrenous and sloughing patch of lung with ill-defined edge. There was no macroscopic evidence of tubercle, and the appearances were not those of gummata or syphilitic disease of the lung, as described in some cases reported to the society. Microscopically, however, abundant tubercle bacilli were found in the centre of a small portion of necrosed lung tissue, but several other sections were searched without result. The structure was that of dense fibroid tissue, necrosed and degenerating in places, and with some small-celled infiltration and a few giant cells. Drawings of the lung in its recent state and of the section demonstrating tubercle bacilli were exhibited.

The following card specimens were shown :—

Dr. NEWTON PITT: (1) Supernumerary Supra-renals; (2) Fat Necrosis of Omentum, with Pancreatic Disease.

OTHER METROPOLITAN MEDICAL SOCIETIES.

HUNTERIAN SOCIETY.—An ordinary meeting (clinical evening) of the society was held on April 11th, Dr. C. J. SYMONDS, President, in the chair.—Dr. ETTLES showed a case of Buphthalmos in a boy of four years, blind from birth, and read a summary of what is known of the condition.—Dr. ARTHUR DAVIES showed a case of Leucoderma in a boy of eleven years; the patches were roughly symmetrical and chiefly affected the back.—The PRESIDENT showed a case of Lymphadenoma, with peculiar patches on the hands and feet, thought to be due to the use of arsenic.—Dr. STOWERS showed: (1) a case of Acne Varioliformis, and (2) a case of Extensive Tertiary Syphilitic Patches resembling Eczema.—Dr. FRED. J. SMITH showed: (1) a case of Cerebral Tumour, with paralysis of both sixth nerves as the only localising symptom; (2) a case of General Paralysis of the Insane, closely resembling Disseminated Sclerosis; and (3) a case of Charcot's Disease of the Right Knee-joint in a tabetic man.—Sir HUGH BEEVOR showed a case of Doubtful Myxœdema, with Pitting of the Hands; the symptoms had improved under thyroid treatment.—Mr. J. F. WOODS showed several patients whom he had treated successfully by Suggestion, including cases of toothache, melancholia, and severe neuralgia.—Dr. MILNE BRAMWELL discussed the subject.

WILLESDEN AND DISTRICT MEDICAL SOCIETY.—The inaugural meeting of this society was held on Thursday, March 29th, Mr. MILNER BURGESS being in the chair, when Mr. HUTCHINSON, F.R.S., delivered an interesting address on Dermatology, the Threshold of Medicine. There were present between fifty and sixty medical gentlemen, some of whom came from Watford, Harrow, and other contiguous places. Mr. Hutchinson dwelt on the advantages of studying pathological processes in the skin, as the various stages could so easily be seen and traced. He referred to the constitutional differences in different skins and compared them with similar differences in the internal organs. Incidental reference was made to the strong evidence afforded, by the study of dermatology, of the definite effect of drugs, and he suggested that anyone who was in danger of losing his faith in drugs should devote his attention to that branch of medicine. Many of the laws observed by diseases of the skin were explained and illustrated by descriptions of cases and by a number of valuable coloured drawings.—After the address a vote of thanks to Mr. Hutchinson was proposed by the PRESIDENT and seconded by Dr. BERNARD O'CONNOR.—After an adjournment for refreshments a number of new members were proposed and seconded, and the meeting terminated with the usual votes of thanks to the President and office-bearers.

PROVINCIAL MEDICAL SOCIETIES.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this institution was held on April 12th, Mr. CHAUNCY PUZEY, President, being in the chair.—Mr. FINGLAND exhibited and explained a new Inhaler for administering Ether and Nitrous Oxide Gas, invented by Mr. Rumboll of Leeds.—Mr. ARTHUR WILSON read a case of Œsophagotomy for Tooth-plate in a man aged sixty-five. All efforts at extraction failed, and it was removed by external operation twelve hours after the accident. Great difficulty was experienced, as the sharp clip for attaching the plate had become firmly embedded in the posterior wall of the gullet; this was at length freed by two pairs of dissecting forceps. A soft rubber tube was passed from the mouth and the patient fed regularly. Continued rapid breathing was present after the operation, and although there were no other unfavourable symptoms the man died from exhaustion on the fourth day. Mr. Wilson invited discussion as to the advisability of using a tube in the after-treatment, and, if so, whether it should be passed from the nose, mouth, or wound.—Mr. STANSFIELD, Dr. BRIGGS, Dr. SAMUELS, and Dr. RAWDON took part in the discussion.—Dr. BRIGGS mentioned a case of Prolapsus Uteri with a Phosphatic Vesical Calculus. The patient was thirty-five years of age, and the prolapse had existed for five years (ten years after the birth of her only child). Formerly she could wear a watch-spring pessary, but latterly this had increased the pain. An anterior elytrorrhaphy and a colpoperineorrhaphy were performed for the relief of the prolapse. Three weeks later a large calculus was found in the bladder. It being too big to remove per urethram without the risk of permanently destroying the sphincter, a longitudinal incision was made in the vesico-vaginal septum, and after extraction the bladder was drained by a glass tube for twelve days. The septum healed completely, leaving a fine linear cicatrix.—Dr. NEWBOLT, Mr. MURRAY, Mr. LARKIN, and Dr. RAWDON made remarks on this case.—Dr. A. C. HARRIS read notes of a case of sudden death in a child aged eight months, for which he had been unable to determine the exact cause. Up to twenty-four hours before its death the child was satisfactory in every respect. Dr. Harris saw it at ten o'clock in the morning because it had had a crying night and seemed in pain. The temperature, pulse, and respiration were normal; nothing wrong found in the chest. Abdomen slightly tender, but without tumefaction. Urine said to be scanty. Diagnosis made of intestinal irritation. A dose of castor oil was ordered at once, and five drops of sweet spirits of nitre occasionally during the day. The bowels were copiously moved, and during the afternoon the child seemed nearly well again. At five minutes to six it began to take a bottle; three minutes later the nurse, noticing a change, called the mother, who saw the child was dead. There was no choking, cough, or struggle; the face was quite pale. Necropsy, fifteen hours later: rigor mortis well marked; all the thoracic and abdominal organs healthy; cardiac ventricles in firm systole; intestines empty, without ecchymoses or adhesions, &c. A little milk in the stomach. The brain was not examined.—Dr. ALEXANDER read a paper on Puerperal Fever based on his experience at the Liverpool Workhouse Hospital. He quoted statistics of all the lying-in registers he could find—namely, for twenty-six years. During that period 8323 women had been confined, of whom 2685 were entered as married and 5638 as single. The mortality from septic influences was 0·5 per cent., and from all causes 1·4 per cent. The causes of death were verified generally by post-mortem examination, and sometimes occurred several months after confinement. The causes of death were described in detail and points of interest briefly alluded to. Dr. Alexander then proceeded to show that the arrangements of nature, at and after confinement, in ordinary cases, were admirably adapted for the healing of the intra-uterine wound aseptically and safely, that puerperal fever was a wound fever and nothing else, and that the contagious fevers, such as scarlet fever, had no influence in producing puerperal fever, except the patient at the same time contracted that contagious fever, when she would probably suffer from it and not from puerperal fever. He then described the lying-in wards at the workhouse, the staff employed there, and the means adopted for the prevention and cure of puerperal fever. He alluded to the statements made by a member of the institution before the Royal Commission in regard to these statistics and said he had invited this member to attend and make his objections to them before his medical brethren, but he had not replied or attended.—Dr. MACFIE CAMPBELL had recently absolutely forbidden nurses to use douches; the only cases of puerperal hyperpyrexia he had had in his own practice were due to the careless use of douching by nurses. Dr. Campbell considered that a legitimate speciality is a midwifery one, and that midwifery practitioners should avoid attending infectious diseases as much as possible. He had himself ceased to attend scarlet fever and erysipelas for many years past.—Dr. GEORGE JOHNSTON took Dr. Alexander's meaning to be, not that we were to be careless in allowing contact with contagious fevers, but that we were not to be satisfied that the existence of scarlet fever in the proximity of the patient was the cause of the puerperal fever He

mentioned the case of a child aged two who had scarlet fever and slept with his mother, and a few days after the mother was confined, with no ill effects to her; also the case of a woman who, three days after confinement, developed scarlet fever and no puerperal fever. He thought that puerperal fever was still too common in the practice of midwives, that only few of them were able to recognise the early symptoms which indicated the need for the douche, and that those responsible for the training of midwives should see that this point was well attended to.—Dr. T. B. GRIMSDALE said that he would prefer to get rid of the name puerperal fever, which, though time-honoured and in general use, was responsible for a vast amount of mystery and superstition. The term at present included a large variety of pathological conditions. By employing the term puerperal sepsis some definite idea would be conveyed. At present puerperal fever might mean any rise of temperature during the lying-in, or it might mean some dread specific disease which, according to some authorities, was peculiar to lying-in women, having origin from scarlet fever, typhus fever, erysipelas, &c., but which, becoming modified in the puerperal woman, gave rise to puerperal fever. All these theories and many more would be swept away and the treatment infinitely simplified and made more satisfactory if the term sepsis was used in place of puerperal fever.—Dr. BRIGGS had listened with pleasure to the views of an operating surgeon on puerperal fever, and he thought that, allowing for difference in site, the surgical fevers were typically represented by the puerperal fevers. He held that the traumatism in precipitate labour and in operative midwifery ought to be considered in relation to subsequent asepsis, and here an intra-uterine douche given immediately after the labour would secure what many subsequent douches might never accomplish.—Dr. HOPE said that during last year 17,758 births occurred in Liverpool and eighteen deaths were registered from puerperal fever. The midwives in these cases were prohibited for a certain time from following their employment.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Wednesday, April 4th, 1894, the President, Professor DIXON MANN, M.D., F.R.C.P., being in the chair.—Dr. JULIUS DRESCHFELD showed two cases of Friedreich's Disease. Case 1: A girl aged eighteen. No other member of the family affected. No history of alcoholism in the parents. The first symptoms began ten years ago, when she noticed that she could not walk so well. Five years since, after an acute febrile attack, she became worse and was much affected in her walking, and three years ago, after a further acute febrile attack, she became much worse, and has not since then been able to walk or stand by herself. She is of diminutive size. There is slight horizontal nystagmus on fixing a certain object when the muscles of the neck also show slight movements; speech is affected; the upper extremities present incoördination; the lower extremities marked incoördination; there is both static and motor ataxia; the superficial reflexes are present, but the deep reflexes are absent; there is no anæsthesia; there is no affection of the bladder or rectum; the patient complains of slight pain in the arms and legs; the toes are forcibly flexed, and there is commencing talipes. Case 2: Boy aged sixteen; no other member of the family affected. The symptoms date from early infancy. The patient can stand and walk, but his gait is markedly ataxic; occasional slight nystagmus; no affection of speech; tremor of tongue; upper extremities show slight incoördination; lower extremities show marked incoördination; the peronei and tibialis anticus are weak and somewhat atrophied; the big toes are hyper-extended, presenting the appearance of a foot in the recumbent posture and resembling that seen in the early stages of peripheral neuritis; the electric reactions are normal; the superficial reflexes, except plantar, are normal; the deep reflexes are absent; there is no anæsthesia; when walking or standing there is marked lordosis; no affection of bladder or rectum; intelligence fairly good; growth somewhat stunted. With the peroneal type of myopathic atrophy there was in this case, owing to the atrophy and weakness of the peronei, some resemblance, but the marked ataxia, the absence of anæsthesia and the normal state of the electrical reactions are sufficiently distinguishing features.—Dr. PRINCE STALLARD gave a short communication on the Choice of an Anæsthetic in Minor Operations. Mention was made of the nature of cold produced by chloride of ethyl and the merits of cocaine were described. As a general anæsthetic in operations of short duration the use of chloroform was condemned, and the employment of nitrous oxide gas combined, if necessary, with ether was strongly recommended.—Professor LUND read a paper on Possible Errors or Oversights in dealing with the Incipiency of Surgical Disease. He began by quoting the remark once made by Dr. Addison on entering the medical clinical wards of Guy's Hospital: "Surely, gentlemen, ours must be a most delectable profession, for we are engaged from morning to night in trying to guess riddles!" and Dr. Johnson, in his Dictionary, has said, "a riddle is a puzzling question." Carrying out this line of thought Professor Lund proceeded to relate cases of almost dramatic interest, which showed how easily the earliest signs of surgical disease may be overlooked and passed by unheeded until conjoined with other associated changes which throw new light upon the case and alter its general aspect, the discrepancies vanish, all is made clear and intelligible, and the riddle is guessed. He gave five striking instances illustrative of such errors or oversights, which he described in detail somewhat humourously, and the paper was listened to with much attenton and great interest.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Wednesday, April 4th, the President, Mr. A. H. EVANS, being in the chair.—Mr. L. FREER showed a boy with severe rachitic curvatures of the lower extremities.—Mr. WM. THOMAS exhibited three cases of congenital malformations. In the first—an infant eight months old—the right foot was the subject of talipes equino-varus. In the left foot the great toe was almost absent, and appeared to have been obliquely sliced off, and the tip of the stump united to the next toe; the other toes were somewhat rudimentary; in the lower third of the leg a deep groove completely surrounded the limb, causing a permanent constriction. The groove, and, perhaps, to some extent, the malformation of the toes, were apparently due to constrictions by the umbilical cord during intra-uterine life. The second case was also an infant eight months old, in which the right foot was uniformly swollen and œdematous, giving an appearance of elephantiasis to the limb. The left arm and forearm were perfect, but the whole of the hand was rudimentary, being represented by a small stump with the rudimentary fingers and thumb hanging from its extremity. The third case was somewhat similar to the last, but the patient was a boy nine years old. Only about the upper third of the left forearm was present. The upper end of the ulna articulated normally with the humerus, but the head of the radius moved freely over the capitellum. Both bones appeared fused together about two inches and a half from the elbow, and a rudimentary thumb and four rudimentary digits were attached to the extremity. There was a slight amount of voluntary movement in the digits.—Mr. FAIRLEY showed a full term Fœtus from a case of Placenta Prævia. The specimen had severe talipes varus of the left foot. The right thigh had been amputated in utero at the junction of the upper and middle thirds. The stump was well formed. It was the fifth child, and all the others had been well formed.—Dr. CHRISTOPHER MARTIN read a paper on Painful Menstruation, its Causes and Treatment. Dysmenorrhœa—a symptom of many lesions, not a disease in itself. Division of cases into two groups: (1) uterine; (2) extra-uterine. Causes of the pain: (1) congestion; (2) spasms; (3) neuralgia. Treatment; domestic remedies; anodynes. The abuse of alcohol and opiates. Indications for surgical interference; dilatation; conservative operations in the appendages; removal of the appendages. The influence of massage.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 4th, 1894, Dr. HUNTER, President, being in the chair. Dr. ELDER gave an address on a Year's Work on Abdominal Sections performed for Diseases of the Uterus and its Appendages. A series of 51 operations with 1 death, or a mortality of less than 2 per cent., was dealt with. The list consisted of: hysterectomies, 2; ovariotomies, 16 (1 unsuccessful); removal of the appendages for inflammatory disease, 24; for uterine myomata, 2; extra-uterine fœtation, 1; incision and drainage in tuberculous peritonitis with effusion, 1; and exploratory incisions, 5. Various points in connexion with these cases were described, In the discussion which followed Drs. HUNTER, STEAVENSON, and BURNIE, Mr. BELCHER, Drs. WATSON and MICHIE spoke, and Dr. ELDER replied.—Dr. HANDFORD showed the Heart from a case of Ulcerative Endocarditis. It was from a man aged thirty-nine who had been for some years a soldier in India. He had rheumatism nine years ago, and his fatal illness commenced with a fresh attack. The most prominent signs

were the rapid increase in the aortic incompetence and the wide daily variations in the temperature, which often reached 103° F. in the evening. There were no rigors, no signs of embolism, and but little precordial pain. The appetite remained good during most of his illness. He obtained no benefit from iodide of potassium, quinine, or salicylate, and his temperature was not in the least reduced by them. He obtained marked relief, and his general well-being was distinctly improved by repeated small doses of opium. Malignant endocarditis was diagnosed early in the case. Petechial spots appeared, widely diffused, fifteen hours before death. Post mortem a pint of fluid was found in the pericardium. The surface of the heart was smooth, except for slight roughness over the right auricle. The heart weighed twenty-three and a half ounces. The aortic valves presented a peculiar worm-eaten appearance. A long tag of vegetations hung from one of the curtains. On the side adjacent to the mitral valve some small punched-out ulcers were seen. The chordæ tendineæ of the mitral valve showed a few vegetations, and on the curtain adjacent to the aortic orifice was seen projecting an aneurysmal swelling the size of a small bean. The other organs presented nothing noteworthy. There were no infarctions.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Thursday, March 29th, the President, Mr. RICHARD FAVELL, being in the chair.—Dr. PORTER showed a girl aged fourteen, the subject of Gradually Progressive Paralysis of the Muscles of the Extremities and Trunk following an attack of scarlet fever six years ago. Though there was no very marked muscular atrophy there were loss of reaction to both faradaic and voltaic currents, and pronounced lordosis on standing; knee-jerks abolished; family history negative.—Dr. ALFRED ROBINSON showed a case of Bradycardia in a man aged seventy-one. On examination the heart was found to beat at the rate of 30 per minute. The most marked symptom was periodical fits with complete loss of consciousness. The heart trouble dated from an attack of Rheumatic Gout twenty years ago.—Dr. BURGESS showed a case of Addison's Disease.—Mr. CLARK (Harthill) showed a photograph and read the notes of a remarkable case of Chloasma in an unmarried woman twenty-two years of age. There were two sharply defined symmetrical black patches on the cheeks extending from the eyebrows down to the level of the upper lip and from the nose to within an inch of the ears. There were several pigmented spots on the chest, but they were not so dark as the patches on the face. The discolouration persisted for some months, and during this time the patient was subject to attacks of vomiting, the pigmentation being deeper just before and after these attacks. No sign of hysteria; no uterine or ovarian disorder. There was marked hyperæsthesia of the discoloured skin areas.—Dr. KNOX showed a specimen of Perforating Ulcer of the Stomach.—Mr. SNELL read the notes of a case of Osteoma of the Orbit.—Mr. ATKIN showed an Osteoma removed from the Left Nostril.—The growth weighed 294 grains, was two inches long, one inch broad, and one inch and a quarter deep. On opening the nostril it was found that the growth had become spontaneously detached, and was simply jammed in the nostril. What was its precise site of origin was difficult to say. A naso-pharyngeal polypus having been detached, the bone was pushed forward by the finger and extracted with vulsellum forceps.—Dr. PEARSON gave particulars of a case of Trephining for Depressed Fracture of the Skull caused by a slate falling from the roof a house. Four days after the accident attacks of twitching of the limbs and face, with unconsciousness, set in. These fits persisted until the operation about a week after the accident. On removing the disc of bone at the seat of the fracture with a half-inch trephine two drachms of pus escaped. The patient was now quite well.

BIRMINGHAM LYING-IN CHARITY.—The annual report of this charity states that the system of attending poor women in their own homes continues to meet with unvarying success and gives every satisfaction to patients. The midwives of the institution have now attended 23,176 cases with a mortality among the mothers of only 56, or one in 414. During the past year 905 deliveries with four deaths of mothers were reported, but no case was due to puerperal causes. The number of children born alive was 889, of whom 458 were males and 431 females, the deaths numbered 11. The assistance of the house surgeon had been called in on seventeen occasions and the cost per head of the deliveries had fallen to 11*s.* 8¾*d.*

Reviews and Notices of Books.

The Hygienic Prevention of Consumption. By J. EDWARD SQUIRE, M.D., M.R.C.P. Lond., D.P.H. Camb., Physician to the North London Hospital for Consumption, &c. London: Charles Griffin and Co., Limited. 1893.

"WE owe it to succeeding generations, as well as to those of our own day, to allow no time to be lost in commencing a systematic attack against a disease which annually destroys so many useful lives, and which is handed down in so many families as a fatal inheritance" (p. 151). This passage, which closes the chief part of this very able work, might well be taken as the thesis upon which the whole is founded. That tuberculous phthisis—the scourge of this country—is a preventable disease, and that its prophylaxis is based in large measure upon the observance of hygienic rules, is a truth which needs to be thoroughly and widely known and acted upon, with an indubitable gain to the community. Nevertheless, the task of enforcing the laws of wholesome living cannot be imposed from without. To schedule phthisis in Notification Acts and invoke the aid of sanitary authorities, or to attempt, as some have even ventured to suggest, the enforcement of measures of segregation, would not only be futile, but even barbarous. Dr. Squire points to a more excellent way, in that he shows that very much can be done by the diffusion of knowledge as to the real nature of the disease, the modes in which it is acquired, and the preventive means that lie within the power of individual households. This, it seems to us, is the great value of his book, the second part of which might with advantage be placed in the hands of any well-educated layman, for it is free from technicalities and states the case with sufficient fulness and clearness to carry conviction as well as impart instruction. From the style of the work we opine that this was one of the author's aims; and although as a general principle it is unwise and often harmful to impart a little knowledge of medical subjects to those beyond the pale of medical practice, there is nothing in this part—viz., that which treats of the "Prevention of Consumption"—which could possibly cause harm, but much, on the contrary, that would produce great benefit by a wide publicity. The prevalence of phthisis has unfortunately been the cause of an infinite amount of popular literature being produced by empirics, and eagerly perused by the public, and it is time that wholesome advice should be given from an accredited source.

For our own part we have carefully read Dr. Squire's book, and can safely say that it will repay study even by the most cultivated physician. The first section, devoted to the "Nature of Consumption," contains many interesting and important facts of scientific value, and in particular may be cited the pages devoted to "predisposition," which plays so large a part in the production of the disease. The author has put his opportunities of studying the natural history of the disease to good use and has succeeded well in showing that the bacillary doctrine harmonises with what is otherwise known of the appearance of the disease under various conditions. In the second part he deals with the "Prevention of Consumption," first taking the individual born with a predisposition and exposed to influences likely to induce phthisis, and showing how his life should be managed from infancy onwards. His remarks on school life, and the care of the "delicate" boy or girl, are especially sensible as well as thoughtful. Then the subjects of exercise, of clothing, and of diet are considered, and that of the choice of an occupation, all topics of great importance, and upon which advice must be sound and reliable. There is also a chapter upon the hygienic management of a household in which phthisis has

appeared, which gives opportunity for the inculcation of general rules for the ventilation and warming of rooms, and the special precautions in the disinfection of sputa, which are often the most difficult to enforce, and yet, perhaps, the most essential to observe. Lastly, he discusses the question of State Hygiene in relation to the disease, the regulation of dwellings, of workshops, of trades, of bovine tuberculosis, and the like. The third part of the book deals more particularly with the phthisical invalid, and is noteworthy for the hopeful tone which characterises it. Necessarily much attention is paid to the influence of climate in checking the advance of the disease, and although Dr. Squire abstains from naming all the various health resorts, he lays down with sufficient fulness and accuracy the qualities of the chief kinds of climate and the indications for their being resorted to in different stages and types of the disease. Although the book is not a large one, it is full of instructive matter, and is written in a judicious spirit, besides being very readable.

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1. *Report on Perennial Irrigation and Flood Protection for Egypt* By W. WILLCOCKS With a Note by W. E. GARSTIN, Under-Secretary of State, Public Works Department, Egypt, accompanied by Plans.
2. *The Sanitary Aspect of Nile Reservoirs* By T. G. ROGERS, Director-General of the Sanitary Department of Egypt. 1894.

AN International Commission of three experts is now engaged in studying the most important question which England has as yet brought forward during her occupation of Egypt for the welfare of that country. Whatever the decision of the experts may be, praise must unhesitatingly be accorded to the above exhaustive report, in a royal quarto volume, which embodies the results of four years' laborious preparation. The report is enriched by twenty-nine plans and by ten appendices of an erudite nature, treating of existing reservoir dams, of the Nile traced from Lake Victoria to the Mediterranean, of the strength of various stones and mortars, of the geology of the Nile Valley, and of technical matters only interesting to engineers. So long ago as 1873 schemes were proposed for reservoirs in Upper Egypt, but it is only since 1889 that the success of the *barrage* below Cairo and the improved finances of Egypt have emboldened the Government of the Khedive to take up the project seriously.

Four proposals have now been submitted to Sir Benjamin Baker and his French and Italian colleagues, any one of which will cost about £5,000,000 sterling and can hardly be completed under seven years. Some critics have suggested that the water stored in a Nubian reservoir under a tropical sun may become a dangerous supply to Egypt, which is entirely dependent upon the Nile for irrigation and for drinking purposes; but Mr. Garstin and Dr. Rogers both point out that the reservoir would have a minimum discharge of 20,000 cubic feet of water per second, which is in excess of the maximum discharge of the Rhone at Geneva, while the depth of the water in the reservoir would be from 33 ft. to 100 ft. The two chief requisites for keeping pure the drinking-water supply are therefore promised—namely, abundant inflow and outflow and abundant depth. Moreover, the water in the reservoir will be stored at a time when it is perfectly pure. To the engineering mind it is obvious that the Assouan scheme, because of its rocky foundations, numerous islands, and shallow water, is by far the most fascinating; but it is to be hoped that archæologists in this country will have sufficient influence to prevent the accomplishment of a scheme which necessitates the drowning of the Philæ temple in muddy water during winter. We are glad to read, upon Mr. Garstin's authority, that "any work which caused either partial damage to or the flooding of this beautiful temple would be rightly considered by the whole civilised world as an act of barbarism." Mr. Willcocks seriously suggests the possibility of removing the temple, stone by stone, from its present site, and rebuilding it on any neighbouring island which archæologists may select; and since the publication of his report it has been proposed to leave Philæ upon Elephantine Island, but to raise it out of harm's way—without taking it to pieces. Dr. Rogers pleads against the adoption of a dam at Silsila, because such a reservoir would be dangerously shallow—in some places only from twelve to twenty feet in depth. The Wady Raian scheme would ensure purity of water by greater depth, but does not seem to possess many sanitary advantages over the rival Nubian reservoirs.

It is hardly likely to be adopted, for it is more costly and not capable of relieving so large an area of country as the other reservoirs. We are reminded by Dr. Rogers Pasha that the Nile water at Cairo is worst for drinking purposes just before its annual rise in July and is at its best in October, just after the river has attained its maximum height. It has sometimes been argued that the existing *barrage*, while of priceless value for irrigation purposes, is of danger to public health. This is based on the erroneous assumption that by keeping the water at a higher level a stagnant lake must be necessarily produced; but it may very easily be proved that the *barrage*, by admitting water to the new canals of Lower Egypt, has improved the water-supply of those towns which lie upon the canal banks. Moreover, the subsoil water must be raised in proportion to the holding up of the Nile, and, therefore, wells are better supplied than formerly; but, on the other hand, Rosetta and Damietta get rather less water direct from the Nile and have had to have new canals constructed to supply them, and the velocity of Low Nile above Cairo for two or three miles is reduced, making it more and more imperative for the intake of the Cairo Water Company to be shifted considerably above its present site. This is a point which, if we remember rightly, was insisted upon by the three Commissioners who lately advised Cairo with regard to its drainage scheme; but the existing disadvantages of the *barrage* will be done away with by the creation of a Nubian reservoir, for, instead of the Damietta and Rosetta branches of the *barrage* having to be closed for six weeks in June and July, Mr. Willcocks calculates that there would be a daily discharge of 2,500,000 cubic metres per day below Cairo during the whole summer. Dr. Rogers quite rightly insists that cultivation should not be permitted in the bed of the future reservoir, and that every means should be taken to avoid pollution of the water-supply by cementing or anything else. He writes somewhat pathetically: "There must be a great temptation in dealing with large irrigation questions to reduce all results to cotton or sugar-cane. I would only ask that human life should be given a small place in the calculations." It has been insisted by a medical writer in the columns of a contemporary that the high infant mortality of Egypt, which regulates also the general mortality of the country, is to be attributed entirely to the impure water of low Nile; but the statistics of the Egyptian Government, based on an inaccurate census twelve years ago, are not sufficiently reliable to be quoted in making a comparison of the mortality of the various towns. The mortality tables of Dr. Engel, the head of the statistical department in Egypt, show that the curve of infant mortality during the first year of life corresponds not only with Low Nile, but equally and to a marked degree with the raised air temperature. It may, apparently, be laid down as a law that whenever there is a continuous maximum temperature above 95° F. in the shade in Cairo then the death-rate of infants under one year becomes doubled. This is irrespective of the height of the Nile.

Owing to the absence of rain, Egyptian agriculture depends entirely on irrigation. Some parts of the country already enjoy perennial irrigation and can always produce two or three crops per annum. The summer crops are cotton, sugar cane, rice, vegetables, and fruit; the flood crops are

maize or millets; while the winter crops are wheat, beans, barley, peas, and clover. To these Mr. Willcocks proposes to add a new industry—that of fish-breeding as carried out in the reservoirs in China; but the Nile itself is dependent upon the rainfall of the countries it traverses from Lakes Victoria and Albert to Khartoum. The rainy season mostly lasts from April to September, the maximum rainfall everywhere being in August. From Berber to Alexandria the country may be considered practically rainless. Mr. Willcocks has calculated from various authentic sources the time which the water takes to travel down the different lengths of the Nile. He finds that it takes three months for the water during low Nile to reach the sea from Lake Victoria, while this distance of more than 4000 miles is traversed in fifty days during the flood. The annual movement of the Nile has been attended with so much mystery and conjecture that we may be justified in dwelling upon it briefly. The Nile drains nearly the whole of north-eastern Africa, and an average year in the Nile basin may be thus epitomised. The heavy rains near Gondokoro begin in April and force down the green water of the swamp region. This rise of the White Nile is felt at Khartoum about May 20th and at Assouan about June 10th. The green water announcing this rise is seen at Cairo about June 20th. The red, muddy water of the Blue Nile reaches Assouan about July 15th and Cairo about July 25th. Once the red water begins to appear the rise is rapid, for the Atbara is in flood shortly after the Blue Nile and rises with great rapidity. At Assouan the Nile enters Egypt, which it traverses for about 800 miles. The river rises slowly till about July 20th, and then more rapidly through August, reaching its maximum about Sept. 5th and then falling very slowly through October and November. Some day in the far distance irrigationists hope to see a long series of reservoirs stretching from Nubia to the Equator, with accurate rain-gauge stations and telegraphs to foretell with certainty the coming flood. At present the total quantity of solid matter carried to the sea by the Nile in an average year is about 36,000,000 tons; and it is further calculated that the amount of water which reaches the sea represents one-fortieth of the rainfall in the Nile basin.

Burdett's Hospital and Charities Annual, 1894. Edited by HENRY C. BURDETT. London: The Scientific Press (Limited). New York: C. Scribner & Sons.

THE information in this annual is preceded by a retrospect of the "chief events and stages of progress" which marked the course of the year 1893. This record is very meagre and would seem to have been designed to extol the work of certain institutions and condemn by silence that of other charities certainly not less worthy of mention. Full particulars, on the other hand, are given of the proposed Central Hospital Board for London—a project dear to the heart of the editor of the Annual. The cost and character of hospital work is touched upon with regard respectively to in-patients and out-patients, at the metropolitan and provincial medical charities and those situated in Scotland and Ireland. Records of income and expenditure of the different hospitals in the three kingdoms occupy a considerable space in the book, and great pains have evidently been taken to afford the reader the opportunity, by means of analyses, to form an estimate of the comparative cost of management of the various charitable institutions enumerated in the book. The construction of hospitals and their drainage and fittings come in for consideration, and the subject of nursing in its various aspects, as well at home as abroad. A synopsis of the American medical institutions is followed by a *résumé* of the different home philanthropic societies—such as the Hospital Sunday and Saturday Funds; and this brings us to the conclusion of a work, which, with the exceptions we have taken above, leaves little to be desired.

LIBRARY TABLE.

The Microscopical Examination of the Human Brain, Methods. By EDWIN GOODALL, M.D. Lond., B.S., M.R.C.S. London: Baillière, Tindall, and Cox. 1894.—This handbook is really what the author calls it in his preface, "a compendium of methods for the preparation of the human brain for microscopical examination and museum purposes." These methods have in the last few years become much more elaborate as well as more numerous, and some of them at least are closely associated in their origin and in their successful application with Mr. Bevan Lewis and the Wakefield Asylum. From Dr. Goodall, the pathologist to this institution, it may be expected that the very latest modifications of the Wakefield methods will be obtained, and in this work he has described them, and has also given in sufficient detail the various processes of staining, injecting, &c. which are used in the study of cerebral pathology. The book is not an ambitious one, but it is thoroughly practical, and will be a useful and valuable addition to the library of everyone who is devoting attention to the morbid processes which affect the brain.

The Common Neuroses; or, the Neurotic Element in Disease and its Rational Treatment.—By JAMES F. GOODHART, M.D., F.R.C.P. Second Edition. London: H. K. Lewis. 1894.—Some time ago Dr. Goodhart published in book form the lectures which he delivered before the Harveian Society in the session of 1891, and the volume before us is a copy of the second edition of the same work. The lectures are reprinted in practically the same words in which they were delivered and in which they appeared in our columns at the time. They are characterised by all the qualities, mostly good qualities, which one is accustomed to look for in all that Dr. Goodhart writes. They are terse and vigorous in their expression and permeated by strong common sense, while as the embodiment of the experience of an able and skilful physician in dealing with a peculiarly difficult class of diseases the little volume is well worthy of a most careful perusal.

Kelly's Handbook to the Titled, Landed, and Official Classes for 1894. London: Kelly and Co., Limited.—We have received a copy of the twentieth annual issue of this work, which is now too well known to need any detailed description. The New Year's honours are included in the handbook and corrections are made to Jan. 25th. The book now numbers 1308 pages.

New Inventions.

AN ASEPTIC PORTABLE HYPODERMIC CASE.

THE accompanying illustration shows a very compact and portable hypodermic case, which contains an aseptic syringe, two needles, and a case of eight cells for hypodermic tabloids—cocaine, atropine, pilocarpine, morphia, morphia and atropine, apomorphia, strychnine, and ergotine—with one cell for lamellæ cocaine, which latter are very useful when a medical man is suddenly called upon to extract a piece of grit from a person's eye. The case is composed of three pieces, which screw together. When unscrewed each piece has a revolving lid to prevent the escape of the contents from the three cells into which each piece of the case is divided. The case, which measures two inches and a quarter in length and is half an inch in diameter, fits into a receptacle in the hypodermic case. The whole can be made in silver, white metal, plated or nickeled, or in aluminin. The

hypodermic case measures three inches by two inches by one inch. The chief features claimed for it are that it can be kept aseptic, is compact, and can be carried in the waist-

coat pocket. The case is made by Messrs. Reynolds and Branson of Leeds, to the design and at the suggestion of Mr. John W. Walker of Wakefield, L.R.C.P., M.R.C.S. Eng.

A NEW PULSIMETER.

WE have received from Mr. Redepenning, of 11, North-crescent, Bedford-square, W.C., a specimen of a watch bearing a new and ingenious device for registering the pulse-rate quickly, accurately, and in the dark.

The directions for use are as follow: To find the rate of pulse per minute press the keyless button with the finger of one hand, thus starting the chronograph hand, while, with the finger of the other hand on the pulse, mentally counting the arterial beats. When these have reached twenty, again press the keyless button, and the figure at which the chrono-

graph needle stops indicates the pulse-rate per minute. A third pressure of the keyless button will bring the needle back to its starting point opposite the figure 12, and until this is made the watch will be registering the pulse-rate that was last taken. A little practice is required to enable the physician to use the watch with perfect precision.

The advantages of the device are two, and both are undoubted, though not of equal value. 1. The pulse-rate can be accurately obtained in the brief space of from ten to fifteen seconds. This is not a great advantage. The physician who cannot spend one minute in taking a patient's pulse must be very overworked, and many useful little indications as to the condition of the circulation which would be apparent to the finger resting on the artery for a minute might not be apparent to him in fifteen seconds. 2. The number of pulsations can be calculated without looking at the watch. This is a real and great advantage. It means that the pulse can be taken in the dark and without the patient's knowledge. In many susceptible patients the mere fact that their physician is taking the pulse causes the rate and rhythm of the pulse to alter. With this device attached to his watch and his finger in his pocket on the keyless button, the physician can observe by eye the beat of the temporal artery, can start the chronograph hand and shut it off again at the twentieth beat, and the patient's pulse is registered. The watch can be looked at, and the pulse-rate ascertained and, if necessary, written down, at the physician's convenience. The possibility of taking the pulse in the dark is also very useful. Many a time the physician must have regretted that the bringing a candle to the bedside to enable him to count the pulse-rate has disturbed the patient. We refer more especially now to the house-surgeon or house-physician, who is responsible for accurate details to his superior officer. He might have quite sufficient experience to enable him to feel satisfied that the pulse is normal, or too quick, or too slow; but as it is his duty to satisfy another on those points he must have an accurate written register to support his mental impression.

It will be gathered that we consider that Mr. Redepenning's invention is distinctly one with practical uses; and it should be added that in the specimen submitted for our opinion the device has been attached to a strong, serviceable watch, with a good movement, which has also proved during its period of trial a reliable timekeeper. The price of this specimen, in silver, is, we are informed, five guineas; while a similar watch in eighteen carat gold would cost from eleven to fifteen pounds.

WIGAN MEDICAL SOCIETY.—The ordinary meeting of this society was held on Thursday, April 12th, in the board-room of the Royal Albert Edward Infirmary, Mr. E. H. Monks, jun. (President), presiding. The President gave his address on Puerperal Eclampsia. This was followed by a discussion in which the following members took part: Mr. Brady, Dr. Rees, Dr. Benson, Dr. Prosser White, Mr. Monks, sen., and Mr. Lowe. Dr. Garry of Liverpool then read a very interesting paper on the Therapeutic Value of Electricity in Gynæcology. A hearty vote of thanks was accorded him.

THE ÆSCULAPIUS LODGE OF FREEMASONS.—The concluding meeting of a most successful masonic year was held at the Café Royal, Regent-street, on the 11th inst., the Worshipful Master, F. Ernest Pocock, M.D., presiding. Jacob Pickett, M.D., was unanimously elected master for the ensuing year. G. Danford Thomas, M.D., and Thomas Dutton, M.D., were re-elected treasurer and secretary respectively. F. Harry Simpson and James Crooks, M.D., were admitted to the third degree, and J. Routledge Bosworth, M.R.C.S., to the second degree. W. Arbuthnot Lane, M.S., and C. Luxmore Drew, M.B., Barrister-at-Law, were appointed auditors to examine the accounts, which, the treasurer stated, were in a satisfactory condition. The brethren, after the masonic business was concluded, sat down to a very enjoyable dinner and spent a pleasant evening. Professor G. Hare Philipson, M.D., D.C.L., made an eloquent speech in response to the hearty manner his health was drunk and as an apology for not being a regular attendant at the lodge meetings pleaded distance as his excuse.

THE LANCET.

LONDON: SATURDAY, APRIL 21, 1894.

THE brewers and distillers have already made an organised movement against Sir WILLIAM HARCOURT'S proposals contained in the recent Budget to levy additional imposts upon their wares. At a meeting of the Parliamentary Committee of the Country Brewers' Society, held on Tuesday last in Westminster, a resolution was submitted by Mr. AGG-GARDNER, M.P., the member for Cheltenham, deploring the principle upon which the brewing and distilling industries were perpetually selected to bear increased burdens, and, as might have been expected, was unanimously adopted. Similar opinions have been very generally expressed from the industrial centres of the alcohol trade, and from the protective societies instituted in the same connexion. There is of course a right and a wrong in the matter. The brewers and the distillers may be overtaxed already. On the other hand, to the casual glance they appear as an opulent body, and it may be that their cry, dictated by a very natural self-interest, is not one that merits particular attention. Of one thing we may be certain—over-taxation or under-taxation of particular industries are always to be trusted to set themselves roughly right. Now the consumer and now the producer will be temporarily in the enjoyable position, but adjustment to justice is, we are glad to believe, the inevitable end. No one expects this philosophical view from the actual body whom it is proposed to tax—to them propositions to turn their whips into scorpions will always appear monstrous—but all know that British taxation in detail is arranged with an eye to justice, and that if an influential section of the community could demonstrate to the national satisfaction that they were being hardly treated repeal or compromise would follow.

We note with some apprehension that there is an almost universal belief that the new burden will fall upon the consumer, and not upon the shoulders that were designed to bear it. In other words, the manufacturer will increase the price to the retailer, who in his turn will increase the price to the public, and under considerable temptation to do so unfairly. Our position with regard to the absolute necessity that the food and drink of the public should be placed by law above all suspicion of adulteration and harmful tampering is, we are certain, well known. It is over forty-three years since, in the first number of THE LANCET for 1851, we started an "Analytical Sanitary Commission," proposing as the scope of our inquiries "to institute an extensive and somewhat rigorous series of investigations into the present condition of the various articles of diet supplied to the inhabitants of this great metropolis and its vicinity"; and from the inception of that work, which is everywhere admitted to have been the prelude to legislation upon adulteration as a whole—i.e., to the Adulteration Acts of 1860 and 1875—to the present day we have never ceased to keep a particularly wakeful eye upon the probable and possible quarters where adulteration might be expected. This alone would have turned our attention to the safeguards enjoyed by the public against the adulteration of alcoholic beverages, as soon as proposals were made public to increase the taxation upon those commodities, if certain remarks published in the daily press as emanating from the liquor trade had not contained a distinct threat that the tax would have to come out of the consumers—that, in other words, the same money would, if the Budget proposals became law, buy an inferior or watered article.

We consider this threat to be exceedingly serious, and to open up a question of the widest importance to the community. There are many points of view from which what is comprehensively, if somewhat slangily, termed "the liquor question," has an especial importance to medical men. Alcohol in diet; alcohol as a medicine; alcohol as a cause of, or an aggravation to, disease; alcohol as the handmaid of crime, are each and all medical themes of great interest—themes, moreover, which appear to be rarely able to get themselves discussed without a certain measure of acrimony, so entirely do they lend themselves to partisan treatment. But the question opened up by the proposals with relation to the alcohol trade in Sir WILLIAM HARCOURT'S recent Budget is a larger one than any of these. It is the question of the possibility and probability of a widespread adulteration of a nourishing article of diet, and an undoubtedly efficacious medicine. It is true that the method of adulteration employed will probably be in well-nigh every instance the addition of water, but it is entirely wrong that it should be possible to adulterate, even in a harmless manner, the diet and medicine of the public. That within limits such possibility exists is proved by the composition of beer as much as by the fact that from the first it has everywhere been conceded that all increased taxation would come out of the consumer's pocket by the sale to him of an inferior article for the same money. Beer is no known compound, and it is not illegal to mix beer with wholesome bitters other than hops. It has no absolutely definite alcohol standard, and no absolutely definite specific gravity. There are substances which by law may not be added to beer—and there the law stops. The only way in which the addition of water to beer can be detected is by discovering that the specific gravity of a certain specimen as retailed is lower than its specific gravity as supplied wholesale to the publican; and it requires almost no chemical knowledge to see that there are a dozen exceedingly cheap substances whose addition to the fluid would obviate the chances of such discovery. We know that these substances are inert, and are aware that the addition of water to beer can never be injurious to beer-drinkers as a whole and might be a blessing in disguise to many of them in particular. But it is not right to consider so phlegmatically the imminence of a widespread process of adulteration. With regard to spirits the matter is yet more important. We have termed alcohol an undoubtedly efficacious medicine, and continue to do so without any reference to the vexed points of its over- or under-employment. Spirits are prescribed as a medicine, and the physician who prescribes them will necessarily desire that they should have a normal standard of strength and be free from injurious properties. The law is able to see that the normal strength

of a spirit is maintained; but it will, we are assured in every direction, be maintained under an increased impost at the expense of the quality. The inferior spirits will be used. We repeat that it is a most serious thing that the public should take it for granted, as they have done since the issue of the Budget, that a valuable article of diet and a widely used medical remedy will be tampered with to meet the exigencies of a tax. We are not so much anticipating that this will occur as reprobating the fact that its probability has been widely discussed, and without adverse comment, as the shortest and most practical way with a financial difficulty.

We have referred only to the question of adulteration, but this is not the sole direction in which the medical profession is concerned in the new budget proposals. The Chancellor of the Exchequer only referred to the increase of 6*d.* per gallon on the duty upon whisky: his scheme carries with it an additional burden for other commodities of which spirits are an ingredient. For instance, an extra 10*d.* per gallon is put upon perfumed spirits and 8*d.* upon liqueurs, cordials, &c.; while for the next twelve months the duty on chloral hydrate is fixed at 1*s.* 4*d.* per lb., chloroform at 3*s.* 3*d.* per lb., collodion at £1 6*s.* 3*d.* per gallon, acetic ether at 1*s.* 11*d.* per lb., butyric ether at 16*s.* 5*d.* per gallon, sulphuric ether at £1 7*s.* 5*d.* per gallon, and iodide of ethyl at 14*s.* 3*d.* per gallon. These increased prices will be a matter of no little moment to many of our readers.

WE announced last week that telegraphic intelligence had reached this country to the effect that the members of the Commission of Hydraulic Engineers appointed to consider the question of constructing a Nile reservoir had finished their labours. Their report has not yet been published, but it is understood that they have agreed to reject the Wady Raian scheme, and that they are of opinion that the sanitary condition of the country will not be injuriously affected by a Nile Valley reservoir.

The published material on the subject of the Nile reservoir is somewhat voluminous and does not readily lend itself to brief analysis, but we are mainly concerned with the public health aspect of the question, which has been made, and still is, the subject of much contention.[1]

The two schemes—for that proposed at Gebel Silsila does not commend itself on sanitary grounds—for retaining water for irrigation purposes, with which the Engineering Commission of experts were concerned, were as follows: one by which the stored supply would largely consist of water from the Abyssinian mountains, and the other in which it would be greatly derived from Central Africa. As far as irrigation purposes are concerned it does not matter whether the crops in Egypt are raised with water from either source; but as the sole water-supply for Egypt for all purposes comes from the Nile the question of the quality of the water becomes, of course, an important consideration.

The White Nile, which is the continuous source, it will be remembered, comes from the Lakes Victoria and Albert Nyanza and flows through some large swamps on its way to Khartoum, where it is joined by the Blue Nile from Abyssinia and subsequently by the Atbara, these additions being the sources of the annual fertilising inundation. The Nile from its junction with the Atbara receives no affluent for some 1800 miles. The effect of a dam on the Nile is to store up temporarily what may be termed the surplus water at high Nile and distribute it for irrigation purposes, but as a constant flow is taking place through the reservoir the result will be, at the Nubian site especially, that the level of the river at low Nile will be somewhat raised for a considerable portion of its length. There is an increase of sickness and mortality—more especially among infants and children—in Egypt during low Nile at places where the drinking water is derived directly from that river, and it is contended by many that these results are altogether attributable to the effect of the low Nile water, but others hold that the water is not at that time the only factor, for a low Nile is coincident with the season of highest temperature, and other subordinate influences are also at work. We have read the report on the "Sanitary Aspect of Nile Reservoirs" by Dr. ROGERS PASHA, the Director-General of the Sanitary Department in Egypt, in which the whole matter appears to us to be stated and discussed in an able and impartial manner. The different points and rival claims of the Wady Raian and Nubian reservoirs respectively are fairly set forth. The balance of advantages of a sanitary kind seems to be in favour of the former scheme. It appears to us, however, that any reservoir which would have the effect of raising the level of the low Nile would tend to improve the sanitary condition of the country and could not, at any rate, tend to make the state of public health worse than it is now; consequently we do not think that it is of great importance which scheme is selected if there is a great difference between the cost of the schemes. We quite concur, however, in thinking that the opinion of a chemical and bacteriological expert as to the quality of the water in a Nubian reservoir should be obtained and would in addition urge that the examination be made from time to time. The influence of swamps and vegetable impurities on water is very different to the bad effects of impurities of animal origin. The cost of any reservoir and irrigation works will be very large in any case, probably £5,000,000. Dr. ROGERS PASHA very pertinently asks, Now that such a gigantic project as a Nubian reservoir is under consideration, why not at once remove all objections by including in the estimate the supply of potable water to the chief towns on the river by some suitable scheme or by a system of reservoirs to be filled at high Nile?

There still remain a few points on which we may briefly touch. There is the grave question of the destruction of villages and the prejudicial influence of the cemeteries that will be submerged by the reservoir, for it will be found impracticable, we suspect, to remove their contents. There are very few villages on the Nile south of the Second Cataract, and a reservoir at this point suggests itself; but we suppose that the distance and the dervishes would be considered at the present time insuperable obstacles. It is easy to understand that the destruction of the temple of Philæ would be regarded as an act of Vandalism, for we do not believe in the practicability of its removal as suggested. The question of a Nile reservoir is a most difficult and important one for Egypt, where English enterprise and administrative ability have already achieved so much.

[1] We would direct our readers' attention to our Review columns at page 1016.

However we may regard the relative advantages and disadvantages of these schemes, it is obviously very important to select one which will, sanitarily speaking, prove the best for the country before incurring the very large outlay that will be required for its execution.

MR. HUXLEY, in spite of impaired health and a near approach to threescore years and ten of age, contrives every now and then to give proof of his deep knowledge of public questions. He has been no exclusive student of human nature. In all its forms, races, modes of government, and in the social and political development of his own particular race he has always shown a deep interest. Even when he touches questions which excite party feeling he does so with such a masterly hand and with a voice of so much authority that men of all parties like to listen and to reflect on what they hear. The City Companies are not quite the quarter to which one has been accustomed to look for high guidance towards the solution of difficult questions, nor are they the bodies to which your common orator would care at this particular moment to give a word of praise and support; but Mr. HUXLEY is not a common orator. He is master not only of the best English of almost any public speaker of the day, but he is a student of all the problems of history and civilisation, as well as an unsurpassed authority in biological science. It is impossible, therefore, as it would be absurd, to regard any speech of his as less than a contribution to a scientific treatment of public questions. It will be a good thing for nations when more of the scientific spirit can be infused into the treatment of public questions, and it is for England in this matter, as in so many others, to set a good example. Mr. HUXLEY, in his remarks on the 500th anniversary of the Salters' Company, gave such a large application to his principal advice as to deprive it of all mere local or party use. "One thing," said he, "which is important for the human race at this time was to catch capable men wherever they could find them, and to give them an opportunity of developing their faculties so as to be of the greatest possible use to their people and their country." This advice is given to all countries alike. The capture of capable men is rather a difficult operation. It is especially so in a country like ours, where there are so many openings for capable men and where private enterprise is often so much more remunerative and pleasant than the public service. The capture of such men is not likely to become easier as the demands of the civil and military service of the State become larger, and where really capable men are apt to be beaten by merely clever men, which is a very different thing. Be this as it may, Mr. HUXLEY declares that it is important for the race to catch capable men wherever they can be found, and "to give them a training and an education by which their faculties may reach their full development."

Mr. HUXLEY protests against the fashionable doctrine of the equality of mankind and declares that if this mistake is not recognised in time we shall have cause to rue the consequences. It surely requires little knowledge of men or of history to recognise that Mr. HUXLEY is right. Whatever the advance and civilisation of nations, they are not independent of their capable men. The most limited study of human nature is sufficient to establish that point. A stone yard, a village, or a country town will afford ample demonstration of the innate difference of men. The inequality of men appears everywhere—in the history of nations as of parishes. The more disputable point is whether Mr. HUXLEY is right in thinking that capable men need to be caught and to be taught, and, this being granted, whether the livery companies of the City of London are the fit and proper authorities for such high functions. The great question is whether these companies are willing to accept such functions. They are composed largely of "capable" men. These gentlemen know that in their origin such companies were intended for this very purpose, and that if they are to justify their continued existence they must do so in some such way as that indicated by Mr. HUXLEY. As a matter of fact, within recent years they have shown a sense of the gravity of their responsibilities and have allotted large sums to the furtherance of technical education and of scientific research. All intelligent people will agree with Mr. HUXLEY in thinking that it is "an extremely happy thing" that there exists "in this huge amorphous London a number of bodies of men of wealth and intelligence which can be used in this way." The City companies may well be congratulated on Mr. HUXLEY's speech. He is a clear-headed man, and for him to recognise that they have been useful and are likely to be much more useful in the future in helping scientific research and in developing technical industry by giving a helping hand to capable men wherever found is no small praise. They will doubtless take fresh heart and vie with each other in such a use of their great resources. All parties will agree that if the Livery Companies can put themselves in touch with schools of all kinds and other institutions where the first indications of struggling genius are to be noticed and can give it an additional chance they will acquire a new lease of life and excite the gratitude of all classes, and especially of that class which needs help. In the military empires of the world dependence on capable men has counted for more than armies. In the conquests of peace and industry it is not otherwise, and that nation will last longest and do best which recognises the individuality of its citizens while it treats them all with equal justice.

Annotations.

"Ne quid nimis."

THE ISLAND OF THE TIBER.

ONE of the subsidiary advantages of such great meetings of the profession as that just dissolved in Rome is the opportunity afforded of ventilating subjects interesting in themselves, though being outside the world of practical concerns, apt to be let slide till the "psychological moment" they have been waiting for is lost for ever. Dr. Baccelli had several of these subjects brought to his notice during the late Congress and will doubtless give them due consideration, and, if deemed advisable or feasible, the desired translation into fact. Such, for example, was the movement for the adequate commemoration of Francesco Puccinotti, the great authority on legal medicine,

the indefatigable worker in the domain of epidemic disease, particularly cholera, and, above all, the writer of that "Storia di Medicina" to whose unique merits THE LANCET has frequently drawn attention. Another, and not less clamant, act of redress is the restoration of the Island of the Tiber, converted into a peninsula by the embankment works still in progress. On the left side of the river, not many feet from the shore, that dorsal ridge had, from time immemorial, divided the current and by the action of the water had come to assume the form of a seafaring craft. The legend that connects it with Æsculapius is one of the most romantic in the annals of the city. In the year 291 B.C. the ravages of the pestilence caused the Sibylline books to be consulted, and, in accordance with their command, ambassadors were sent to Epidaurus, the Greek town on the Saronic Gulf, famous for its temple of Æsculapius and the health-giving snakes cherished there. One of these latter—owing their association with medicine doubtless to their reputed "wisdom" and their power of renewing their slough—was brought back to Rome, where, on the voyage up the Tiber, it took a header into the water and swam to the island. This was quite enough to give sanctity to the spot, whereon was speedily erected to the god and his snake a temple which soon became the most frequented sanitary resort in the city—the point of pilgrimage to the bodily afflicted from all parts of the empire. With the fall of Paganism the Church wisely retained a shrine and a service which had such a salutary record to show, and, having brought it within the Christian sphere, converted it into the important hospital still known under the name of San Giovanni di Calabita. Among the regrettable changes wrought by the too hasty reconstruction of the capital is that by which the Island of the Tiber has been made an island no longer—the channel between it and the left bank of the river having been dammed up under what, it seems, is the mistaken notion that the danger of floods is thereby reduced. The repeated pilgrimages to the spot during the recent Congress elicited a consensus of opinion that the unsightly, anti-historical, and worse than useless innovation should be cancelled, and the "peninsula" restored to its primeval and traditional rights as an island. Accordingly, at a meeting of the "Associazione degli Ingegneri ed Architetti Italiani," a proposal by the engineer Cavaliere Tuccimei for the "ripristinamento" of the island was heard and discussed. Considerable diversity of opinion was evoked as to the best means of effecting this, one expert after another introducing or abandoning his project till three held possession of the meeting. Waiving a decision as to which of these will best attain its object—a decision in which, of course, expert opinion and local knowledge alone can have weight—we are glad to put on record the fact that one of the most ancient monuments in medical history is about to be rescued from destruction, and that this happy reversion to the sound principle—sound, at least in archæology—"quieta non movere"—is the direct outcome of interest expressed and approval signified by physicians and surgeons, chiefly foreign, assembled at the recent International Congress.

THE DAMAGE OF CLOTHING BY DISINFECTION.

IN the case of Hardy *v.* the Vestry of St. George's, Hanover-square, which was heard last week at the Westminster County Court, an action was brought by the plaintiff to recover the value of a coat, which, he stated, had been damaged during the process of disinfection after its exposure to small-pox. It was stated that when the coat was returned there were stains in several parts, and that the pockets, which, be it observed, were of leather, were puckered and spoilt. It was submitted by the vestry that there had been no neglect; that the coat had been exposed in the ordinary way to steam under pressure; and that the case in question was the only complaint out of 11,509 articles disinfected last year. His honour Judge Lumley Smith, Q.C., held that it was *primâ facie* negligence that the coat was received in a good condition by the vestry and returned spoiled, and he gave judgment under the Public Health (London) Act, 1891, for the plaintiff for £3 with costs. If the coat was spoilt by the process of disinfection it is, of course, right that the damage done should be made good, and perhaps in this case the "unnecessary damage" required by the Act was maintained, inasmuch as the leather, of which it is stated the pockets were made, should not have been subjected to the action of steam, which, as is well known, destroys this material. It is, however, difficult to understand how the coat could have been properly disinfected other than by means of steam under pressure; and, in fact, the only satisfactory alternative would have been the destruction of the garment by burning and full compensation by the vestry. It is to be regretted that cases of this kind are brought into court, since it is obviously in the interests of public health for sanitary authorities to encourage the public to send infected articles for disinfection by treating them liberally when damage results.

FEVER HOSPITALS ON THE CHALK FORMATION.

A PROLONGED inquiry which has excited more than the usual professional interest has recently been held at Sutton by two inspectors of the Local Government Board, the subject of the inquiry being an application on the part of the Epsom Joint Hospital Board for sanction to borrow £2500 for the purchase of eight acres of land whereon to erect a fever hospital for thirty-two beds. The proposed site, which stands apparently on the bare chalk—to the west of Banstead Downs—was stated at the inquiry to be well isolated and centrally situated as regards the joint district. It is proposed to cremate typhoid excrement, but to treat the general sewage by means of irrigation on the site. There was strong opposition to the scheme, and foremost among the opponents was the Sutton District Water Company, which draws its supply from chalk wells in the neighbourhood. It was contended by Mr. Baldwin Latham, on behalf of the company, that if the sewage was treated in the manner proposed considerable risk would be incurred of specifically contaminating the well water, since he was of opinion that the flow of underground water was from the site to the wells. Although, he stated, the water level in the chalk is about 150 feet below the surface, and the distance of the wells some two and a half miles from the site, the chalk in the district is so fissured that water might easily pass from the site to the wells without undergoing any of the usual purification by percolation through the body of the rock. Mr. Birch, Mr. Baker, and Mr. Smee gave evidence to a similar effect; but for the Joint Board Mr. Whitaker contended that there was no probability of the water from the site flowing to the wells. We believe we are right in stating that—at any rate as regards the case under consideration—the decided difference of opinion between the experts is due to the uncertainty which exists as to the exact position of the water dividing line in the chalk: the one side contending that this line is on that side of the site away from the wells; the other that it is between the site and the wells. It is, we believe, generally admitted that the chalk in this district is fissured to an exceptional degree. The opponents further urged that since the London clay commences not far from the proposed site, the hospital could easily be erected upon this formation without inconvenience to the Joint Board or risk to the water company. Possibly, too, the opponents might be satisfied if the hospital was placed upon some of the patches of the permeable tertiary beds which we see by reference to the geological

map of the district are to be found not far from the site; at least, if the water companies propose to object to the erection of fever hospitals or, in fact, public institutions of any kind upon such chalk as is not covered by the impermeable tertiary formations, they are raising a general issue which it is impossible to contemplate without some misgivings. It would seem, indeed, that if this objection as a general principle is admitted to be a sound one, and the logical conclusions resulting from it were acted upon, we are upon the horns of a serious dilemma, and either London must cease to extend over the chalk districts or water companies must seek their water elsewhere than from the chalk. Of course this is somewhat a *reductio ad absurdum* of the case under consideration, but nevertheless it is a conclusion that should be borne in mind. We believe, however, that no such general position will be taken up, and that the case in question is exceptional in so far as the fissured chalk and the proximity of the London clay are concerned.

QUEEN VICTORIA IN FLORENCE.

HER MAJESTY has been a better friend to Italy than either of the co-signatories of the Triple Alliance. Her presence in the Tuscan capital has had a reassuring effect on the outside world as to the stability—for the time at least—of Italian institutions, not a little compromised as these have been by financial troubles and internal disturbances. Her Florentine *villeggiatura* has symbolized peace, while it has had its salutary influence in determining the tourist wave to the peninsula at a time when the attractions to other resorts were neither few nor easily resisted. Nor in less imperial aspects has it been inoperative for good. It has swept away, as with a magic wand, the ill-inspired reports as to the sanitary condition of Italy's "Modern Athens," and has once more confirmed the wisdom of her medical advisers in recommending a sojourn which, if the prophets (the not disinterested prophets, we fear) of hygienic evil had been listened to, would have been transferred to other resorts less capable of conferring the restorative and exhilarating benefits Her Majesty has more than once derived from the Tuscan Apennines. Not a few of the British or English-speaking delegates at the recent Congress made a few days' halt on their home journey at Florence, with the result, as we can testify, of finding amply justified the improved hygienic character already given to it in THE LANCET. A city whose annual death-rate has by steady sanitary surveillance—mainly shown in purer and larger water-supply, prompt removal of effete matters, and confiscation of all aliments and beverages certified as unwholesome by inspecting officers—been reduced to 17 or 18 per 1000, has surely a satisfactory record to produce in the department of public health—a record, moreover, which the municipality is proceeding still further to enhance, encouraged as it has been by the sojourn of the British Queen and court within its jurisdiction. It is an open secret that Her Majesty's predilection for Florence and its environs has tempted not a few of her subjects—including Anglo-Indians of the professional classes—to fix their residence for three-fourths of the year in city and suburb, an arrangement they have already found compatible with a larger measure of open-air life, with its implied gain to health, than they had been able to compass elsewhere. Add to this the yearly augmenting appreciation of Florence as a great educational centre, in which young ladies of English-speaking nationality can receive solid and refined instruction while enjoying as good social advantages as can be obtained anywhere out of London, and enough has been said to explain the steady increase of the British and American colony and the corresponding energy of the local authorities to deserve a still ampler measure of such preference. The weather, it is scarcely necessary to remark, has been all that the Queen proverbially brings with her—hardly a drop of rain having fallen during her four weeks' residence in the Villa Fabbricotti. Her Majesty's reply to the municipal and provincial deputation that waited on her to ascertain in what they could still further meet her wishes was one of gracious satisfaction with all that had been done—down to the respectful demeanour of the population in city and suburb. What wonder if, all these circumstances considered, the Queen has let it be understood that her return to Florence next spring is more than probable, and that, stimulated by such a prospect, the local authorities are devising still further improvements to deserve the countenance of their best friends—the British Queen and the English-speaking nationality.

THE DIFFUSION OF SMALL-POX.

THERE was some further increase of small-pox in London last week, 32 cases being recorded, but no deaths were registered. The admissions to hospital numbered 31, and the close of the week found 75 patients under treatment in Metropolitan Asylums Board institutions, and 27 in Highgate Small-pox Hospital, a total of 102, against 85, 81, and 95 on the preceding three Saturdays. Leyton showed an increase with 9 cases, and West Ham had a fall to 31 with 2 deaths. Bristol had only a single attack, and Dr. Davies has recently expressed his conviction that the city has got over the worst of the epidemic Worcester had increased from 2 to 8 cases, Smethwick 7, Aston Manor 15, and Birmingham a rise to 87, with 3 deaths. Much vaccination and revaccination work is being done in the city. A case of small-pox has occurred in the prison, and all due precautions to prevent a spread of the disease are being taken. Several officers and prisoners have been revaccinated, and the patient was promptly removed to the small-pox hospital. Owing to overcrowding of the prison many inmates have been transferred to Stafford. Liverpool had 3 cases, and 1 patient at Chester has been isolated in the small-pox hospital at the infirmary. The cases at Manchester rose from 3 to 6, Chadderton had 4, Oldham 10, and Bradford 5 fresh attacks. A further sea-borne case has reached Barry from Havre, where there has been quite an epidemic.

THE SURREY DISPENSARY AND ITS STAFF.

The Committee of Management of the Surrey Dispensary, which was established in 1777, and has ever since done excellent work in the crowded districts of South London, have recently revised the rules of the institution. The code they have drawn up is ample and exhaustive, but whether it will in all points facilitate the work of the charity may be questioned. In particular we would call attention to the new and revised regulations affecting the medical and surgical staff, upon whom, of course, the utility of the dispensary depends. Some of these regulations strike us as unnecessary, others as positively inequitable and oppressive. The change in tenure of office to a maximum limit of ten years and subject to an annual re-election might under exceptional circumstances be useful, but it can hardly be questioned that under this arrangement the dispensary might lose the services of a medical officer just at a time when his age and experience best fit him to continue in office. There are restrictions, too, as to the place of residence of the two surgeon-accoucheurs, which cannot but limit the choice of candidates, not altogether to the advantage of the institution. Another innovation is the requirement that the honorary staff should visit patients at the patients' homes when necessary, and although the resident medical officer may be deputed to perform this duty the physicians and surgeons will be held responsible for the cases so treated. This increase in their duties and responsibilities is hardly likely

to be accepted by the honorary staff without a protest, and we very much doubt if many in the future will care to undertake an office that demands so much expenditure of time and labour. It is almost adding insult to injury to provide that these officers shall each be granted an honorarium not exceeding fifty guineas annually "in order to meet any expenses which may be incurred in the course of their visiting duties or otherwise," and not only so, but the sum shall only be granted by the committee "after fully considering the nature and manner of performance of their duties." We opine that few, if any, professional gentlemen will consent to have their work criticised and appraised by a body of laymen, who in this manner would degrade their calling to the level of a trade, and estimate the remuneration in question on the principle of *quid pro quo*. We sincerely trust, for the credit of this old-established charity at least, that this obnoxious provision will be struck out before the new rules are finally adopted.

"A DOCTOR AND A MIDWIFE QUARREL."

UNDER this heading the *Blackburn Times* reports an inquest on Elizabeth Ann Jackson, who died after her confinement from blood-poisoning. The patient was attended by a midwife without any hospital training; afterwards two medical men were called in—Mr. Howard and Mr. Wilson. The midwife did not seem to like Mr. Howard being called in, and asked him if he was "going to mend her work." She considered the case was taken out of her hands when Mr. Howard was brought in. Mr. Howard said the woman was filthy when he saw her and ordered fresh bedding. Dr. Wheatley, who made the necropsy, said there was congestion of the intestines and other signs of acute blood-poisoning. There might have been a similar result if the woman had been attended by a medical man. The Coroner said "the midwife, no doubt, had acted according to her light." No doubt; but the light may have been darkness. Dr. Wheatley said that midwives should call in medical men in difficult cases. The jury returned a verdict of "Death from blood-poisoning due to natural causes." It is often said that a midwife with some training would know when to call in a medical man and be willing to do so, but such was not the case here. Indeed, a medical man called into coöperation with a perfectly untrained midwife is in a position of great disadvantage.

ELECTRICAL DISCHARGE IN HIGH VACUA.

SOME striking experiments to illustrate the properties of the electric discharge through gases were shown by Professor J. J. Thomson at a recent Friday evening lecture at the Royal Institution. Not the least interesting experiment was one in which the curious reluctance of the electric discharge to pass from a gas to a metallic electrode was exhibited. Thus it was seen that the discharge between two long metallic electrodes enclosed in a highly exhausted bulb was not from point to point, but from the point of one to the base of the other, the electricity remaining in the gas as long as possible. Professor Thomson was also able to demonstrate that the conductivity of gases at a certain degree of rarefaction is greater than that of any metal, and almost infinitely greater molecule for molecule. But at a higher degree of rarefaction, however, conductivity is diminished, while in a perfect vacuum, as has been shown by some of Professor Dewar's experiments with liquid air, it is probable that the discharge would not pass at all. When a vacuum bulb was enclosed in a vacuum jacket and the whole apparatus placed inside a coil the discharge occurred only in the inner bulb; but upon increasing the density of the mercury vapour (the vacuum having been obtained by the mercury pump) in the annular space the discharge took place there instead of in the inner bulb. Whatever deduction may be made from this experiment it is clear that the annular space in both cases is permeable by electric force; in other words, that electric currents cross a high vacuum quite freely, though they produce no glow to indicate the fact. These beautiful experiments are an extension of the fascinating phenomena connected with rapidly alternating currents, the study and the knowledge we possess of which are due to the brilliant investigations of M. Tesla.

MEDICAL PAY IN THE HORNCASTLE UNION.

THE *Horncastle News*, in a short leading article, expresses the belief that medical men are getting tired of medical officerships to parishes. We do not wonder at it if the facts given are a specimen of the remuneration. Mr. Jessop was asked to take charge of three parishes for the handsome sum of £6 a year. Dr. Dixon stated that he had been paid £20 for six months, whereas he had honestly earned £50. Unions must know that this treatment of their medical officers is unjust not only to them but to the sick poor.

HOW CHOLERA IS SPREAD.

RECENT accounts of the invasion of cholera which occurred last year in the Euphrates Valley illustrate in a very suggestive manner the backwardness of the local authorities in matters relating to public health. Almost the only measure of sanitation adopted was the familiar expedient of enforcing quarantine by means of a military cordon. The comma bacillus and the piastre found no difficulty in traversing this visionary barrier, and the disease moved up to Bagdad, engendered and sustained by the squalor and famine which prevailed in the quarantine station lower down and by the deadly filth and contagion borne by the uncleansed river. Eastern peoples, the Turks not least, have availed themselves freely of Western ideas on such practical matters as war and finance. The question of health is at least as vital to national existence; it is more—it is in the presence of a scourge like cholera essential to the welfare of surrounding States. Instruction unfortunately takes a much longer time to develop into actual results than do the germs of disease, so that the further activity of these is left very much at the mercy of accident. Meantime it would be no more than prudent on the part of consular and other foreign representatives to press upon the Turkish Government and officials the importance of adopting without delay such sanitary precautions as experience has proved to be more effectual than even quarantine for the destruction of contagion.

"THE LANCET" AND THE HAVRE DEPUTATION.

M. FEVRIER, town engineer of the municipality of Havre, or borough surveyor, as we should say in England, and M. Delachanal, engineer of the Havre Chamber of Commerce, very courteously called last week at our offices. These gentlemen desired to explain, on behalf of those who at Havre are seeking to effect sanitary improvements, that the reports published by THE LANCET concerning the insanitary condition of their town had helped on the cause of reform. On our side we have to thank these gentlemen, together with the Mayor of Havre (M. Louis Brindeau), the President of the Bureau d'Hygiène (Dr. Gibert), and other local authorities, for the assistance they gave our special correspondent when he was investigating the causes &c. of the cholera epidemic which attacked that port in 1892. Of the numerous correspondences from towns where cholera prevailed, the descriptions of Havre were among the most interesting and instructive.[1] The municipality of Havre, stimulated by the necessities of the situation, and, we may venture to add, encouraged by our reports, determined forth-

[1] THE LANCET, Oct. 22nd and 29th, and Nov. 12th, 1892, and Jan. 7th, 1893.

with to study how the town might best be drained. For this purpose experiments on a very large scale were made with the Hermite process. These being now terminated, the municipality were anxious to ascertain what were the most successful methods employed in England for draining low level districts and for discharging sewage into tidal waters. Our special correspondent offered to assist the Havre municipality in this respect and went to Southampton to meet the engineers who had been deputed to make this inquiry. The Mayor and corporation of Southampton very cordially lent their aid. The French delegates were hospitably received and shown all that could interest them. The reports of "THE LANCET Special Sanitary Commission on Public Health Measures at Southampton" which appeared last January and February[2] gave in anticipation a very full account of what the French delegates saw. They then proceeded to Portsmouth, where, under the guidance of Dr. Mumby, the medical officer of health, and Mr. Boulnois, the borough surveyor, they studied how the sewage was lifted by steam power and how it was stored till the tide permitted its discharge into the sea. The delegation subsequently proceeded to Eastbourne, where by pneumatic power the sewage is thrown into the sea at all conditions of the tide. They then came on to London. Mr. Shirley Murphy, the medical officer of health, and Mr. Binnie, the chief engineer of the London County Council, gave the delegates all the facilities they desired, and they were notably impressed by the gigantic character of the sewage outfall works at Crossness. They also inspected the mixed methods of drainage employed at Hounslow and Isleworth. Altogether, their time has been very fully and profitably occupied, and M. Fevrier and M. Delachanal were anxious not to leave London without expressing their thanks for the aid received from THE LANCET staff in the mapping out and the successful accomplishment of their mission. Needless to say, our visitors were heartily welcome and we shall be most gratified if future events prove that we have, at least in some slight degree, contributed to bring about those sanitary measures which are so much needed at Havre.

NOTIFICATION AND MORTALITY.

IT is exceedingly difficult to treat seriously the elaborate statistics which are from time to time prepared and published by Mr. D. Biddle in order to prove the disastrous effect of the notification of infectious disease, although it is obvious that Mr. Biddle intends to treat the subject with all seriousness. His letter published in *The Times* of Monday last was a perfect maze of bewildering and irrelevant figures. These statistics are undoubtedly derived from the most trustworthy sources, and his laborious calculations, based upon the Registrar-General's figures, are probably beyond reproach in the matter of method and accuracy. In his objection to notification, and more especially to the dual system of notification, he appears, however, to have lost all power to believe that an increased death-rate, either from all causes or from infectious diseases, can be due to any other cause than notification. The death-rate in 1893 was excessive, partly owing to the result of influenza, partly owing to the high temperature and low rainfall, which caused an exceptional mortality from infantile diarrhœa, and partly to the increased fatality of small-pox, scarlet fever, diphtheria, and enteric fever. Mr. Biddle's letter to *The Times* appears, however, mainly to have been written to persuade its readers that this increased mortality in 1893 affords trustworthy evidence of the deleterious effect of the Notification Act of 1889. The fact is that the Registrar-General's statistics, valuable as they are as evidence of health condition and disease mortality, are practically useless for proving the value or danger of the Notification Act, and the use sought to be made of them by Mr. Biddle merely produces a statistical absurdity. We are far from pronouncing that Mr. Biddle's alarms as to the effect of dual notification are or are not groundless; but we unhesitatingly deny that his elaborate construction of statistics based upon the Registrar-General's figures sheds any useful light upon the solution of this problem. The factors which govern mortality are so numerous and so complex, the true causes of waves of epidemic disease are still so imperfectly understood, and the inter-relations of notification and isolation are so intimate, that Mr. Biddle's figures are not only useless for the purpose he has at heart, but are seriously misleading. Any calculations on this subject made with the object of showing the true effect of notification on mortality which ignore the fact that London, for instance, widely adopted isolation before it had notification, and that many towns have long had notification without any serious attempt at isolation, must obviously invite fallacious deductions.

[2] THE LANCET, Jan. 6th and 20th, and Feb. 3rd, 1894.

SWINE FEVER.

THE efforts to stamp out swine fever are being continued without relaxation, and in a few days the Board of Agriculture will have had the matter in hand for six months. How far the Board has been successful in dealing with it remains to be seen, but in the week ending April 7th there were 196 swine that died from the disease, and 1321 were slaughtered as diseased or because of having been exposed to infection. In the corresponding week of last year the numbers were respectively 143 and 214, so that it would appear as if the scourge had made more headway; but it is possible that the compensation now given may induce owners to report the existence of the disease more readily. At the same time heavy penalties are imposed when they do not give timely notice, one individual having been fined recently no less than £20, the maximum penalty for this omission.

PATHOGENIC GERMS IN THE EMBRYO.

IN the Section of Pathology at the Eleventh International Medical Congress Professor Maffucci of Pisa read a paper on Pathogenic Germs in the Embryo which presented many points of interest, reinforced by practical work. He said that as embryos offered conditions morphologically and physiologically different from those of adults, it was probable that they would react differently when stimuli of infection were applied to them. He had inoculated the eggs of fowls with different species of germs—fowl tubercle, fowl cholera, &c. Some of the eggs were inoculated at the beginning of the sitting, others at different times while the hen was sitting. He made subsequently a histological analysis of the albumen and of all the embryonic tissues. He had further made cultures from this albumen and tissues and had inoculated animals with the cultures. He had also left a series of the embryos to hatch and to grow for some time for the purpose of observing the results of the inoculation made during the embryonal life. After having drawn a series of conclusions from his experiments upon the embryonal life of the fowl inside the egg, he made similar researches on the rabbit. He inoculated mammalian tubercle into the jugular vein of pregnant rabbits. Some of them were kept alive until delivery, whilst others were killed and their tissues were inoculated into guinea pigs. Male rabbits were also similarly treated. As tubercle bacillus was found in the *sperma* before change appeared in the testis, some of the inoculated males were allowed to impregnate the females. From the offspring of these tuberculous parents guinea pigs were inoculated. Others were kept for one year in order to observe the amount of infection contracted during the act of conception. Professor Maffucci drew many conclusions from these experiments. Among others he considered that the living

embryo does not allow of the development of pathogenic micro-organisms in its tissues except under exceptional conditions. The micro-organisms may be destroyed or attenuated or may be stored up in such manner as to develop in the creature after hatching. Some viruses which do not act pathogenically in the adult fowl may act so in its embryo.

RABIES IN THE WEST OF SCOTLAND.

FOR some time there has been a serious outbreak of rabies among dogs in the West of Scotland, chiefly in Renfrewshire and Lanarkshire, and a number of people have had the misfortune to be bitten by them. Much alarm is the result, and the police are earnestly engaged in capturing ownerless animals, their zeal in Glasgow being quickened by the offer of the authorities in that city of a guinea reward to the policeman who captures the largest number before May 1st. Consequently, many hundreds of useless and ownerless dogs have been seized and drowned. The dog-hunters are armed with lassoes of hemp, and all dogs not muzzled are liable to capture.

IN THE WAKE OF THE CONGRESS.

UNDER this head we propose next week to give an account of the various hydrological excursions in which the "Congressisti" took part after the close of the proceedings. These "outings," chiefly on the Neapolitan Riviera, in Tuscany, in the Venetian territory, and in the Sub-Alpine region, were organised with the view of making the medical world better acquainted with Italy's resources in mineral waters and in health resorts for the treatment of those diseases for which France, Germany, and Austria-Hungary have so many and such largely frequented establishments. Reserving for our next number the account of these excursions (received from "A Holiday Contributor") we may for the present remark that their organisation and success were in marked contrast to the failure in both these respects of so much of the programme of the Congress.

THE MILE-END GUARDIANS AND VACCINATION.

THE attitude taken by the guardians towards the Vaccination Acts in the several parts of the country is an interesting study; and the Mile-end guardians have recently passed a resolution which is, at least, instructive. It is as follows: "Every person in default under the Acts that shall not have rendered a reasonable excuse shall be liable to be proceeded against by the guardians, and all those in default, with the exception of those who have already appeared before the board, shall be requested to attend and state their reasons for their neglect." This is certainly one way of attempting to carry out the Vaccination Acts, or rather, perhaps we should say, vaccination, and we should be interested in hearing the several excuses put forward by the defaulters which are regarded as "reasonable" by the guardians. We should have thought it was hardly necessary to remind the inhabitants of Mile-end Old Town that they "shall be liable to be proceeded against," since they may be expected to be sufficiently aware of this fact from the notices of the registrar and vaccination officers.

THE MIDDLESEX HOSPITAL.

THE cancer foundation of the Middlesex Hospital has been long established and is a special feature of the charity, since it affords a refuge to cases of this class that are beyond operative relief. We are glad to see that the sphere of usefulness of this foundation is to be extended by the erection of a separate building in Nassau-street to accommodate the female cancer patients. At the present time three wards, occupying the top floor of the main body of the hospital, are devoted to this purpose; but when the projected building is opened these wards will be set free for other purposes, notably for diseases of women, for which there is only one small ward now available. These aims and objects were clearly set forth in the admirable speech of H.R.H. the Prince of Wales when presiding at the festival dinner of the hospital at the Whitehall-rooms on the 13th inst. The dinner was a marked success in every way, the guests including the Lord Chancellor, Cardinal Vaughan, the Marquis of Breadalbane, the Earl of Onslow, the Earl of Lathom, Earl Waldegrave, the Earl of Gosford, Lord Carrington, General Lord Methuen, Lord Amherst of Hackney, the Lord Mayor and Sheriffs, Mr. Campbell-Bannerman, M.P., Admiral Sir E. Commerell, Sir W. H. Flower, and Sir David Evans. During the evening a telegram was received from Her Majesty the Queen wishing prosperity to the Middlesex Hospital, a fact gracefully and warmly alluded to by Lord Sandhurst, the chairman of the Weekly Board of Governors, who, in acknowledging the toast of the evening, gave a most interesting account of the progress that was being made in every department of the hospital and the projects that were now in hand. He announced the donation to the special fund by Mr. Samuel Whitbread, M.P. (a lineal descendant of the first donor to the cancer fund) of £1000, and we believe that more than one-half of the amount required for the new building—viz., £12,000—has already been subscribed.

AN OUTBREAK OF SCARLET FEVER DUE TO INFECTED MILK.

DR. SCARLYN WILSON, medical officer of health of Hastings, records in his annual report for 1893 an outburst of scarlet fever which occurred at a time when the disease was declining in his district, and which he regarded as being due to infected milk. It appears that no less than 70 per cent. of the houses involved in the outbreak were supplied from one dairy, and that 30 per cent. of houses taking milk from this dairy were invaded. It was further demonstrated that the persons attacked were, as a rule, large consumers of milk. How the milk in question became infected it was impossible under the circumstances to determine. No history of illness could be ascertained in connexion with any of the *employés* at the dairy, nor did any of them manifest signs at all suspicious of recent scarlet fever. On the cows being examined by a veterinary surgeon they were found to have an elevated temperature, a rapid pulse, and accelerated respiration; in fact, they were obviously suffering from fever. There were, however, no signs of any eruption on the udders or teats and no falling off of hair &c. such as was observed in some of the cows connected with the "Hendon disease." It is much to be regretted that Dr. Wilson's suggestion to submit the milk of each cow to bacteriological investigation was not acted upon, since an examination of this nature by a competent bacteriologist, coupled with inoculation experiments might have yielded valuable results.

THE LODGING HOUSES AT ST. HELENS.

MORE than once we have insisted that the poorer class dwellings were not the worst from the constructive point of view. Many a respectable, well-frequented and clean house has organic defects in its method of drainage &c. that would not for a moment be tolerated in a common lodging-house. The assistant medical officer of health of St. Helens was, therefore, fully justified in proposing new by-laws having for object the sanitary inspection of ordinary houses where lodgers are taken in. He desired that all houses not rated at above £15 annual value should be registered if they took in any lodger whatsoever. He had obtained by-laws from some thirty or forty towns which included a similar provision. This would place under sanitary inspection

every lodger who paid less than 7*s.* 6*d.* to cover the use of room and furniture, apart from board. The Mayor of St. Helens objected that practically this would include all the unmarried men of the town, and the prospect seemed so startling that the subject was adjourned for further discussion at the next meeting. The inspection of private lodging-houses need not be as irksome or as inquisitorial as is sometimes imagined. A common lodging-house with its ever varying population requires almost daily inspection, but with a private lodging-house the case is very different. All that is needed is a primary and thorough inspection to see that the house is in a sanitary condition, and, secondly, to decide how many lodgers may be taken in without occasioning any overcrowding. This done, a little judicious inquiry made from time to time will suffice to prevent overcrowding, which would then be the main point remaining that required control.

UNIVERSITY HALL, EDINBURGH.

A CORRESPONDENT writes:—"This Hall was founded by Professor Geddes in 1887 for past and present university students, with a view to meeting a want long felt in Scottish universities—viz, residence under one roof of a number of students, thereby enabling them to enjoy social intercourse and free exchange of opinions combined with various other advantages not usually attainable in lodgings; the idea being to carry on the institution much on the lines of residence in English universities, without the restrictions enforced there. The growth of University Hall has proved conclusively the soundness of Professor Geddes' views. The start was made in 1887 at Mound Place with seven students, which number had increased on my going into residence in May, 1889, to seventeen. There are now additional buildings at Riddles-court, James-court and Ramsay-garden, with about forty-five men in residence last winter, while Ramsay Lodge, opened on April 13th last, contains upwards of forty rooms for the accommodation of students and graduates. That the results have been highly satisfactory is shown by the steady increase in the number of residents, by the general satisfaction expressed by them, by the large percentage of honours gained, and by the successful manner in which professional examinations have been passed. I may add that my stay at University Hall was one of great pleasure to me, and fully realised the expectations which I had formed."

DEATH UNDER CHLOROFORM.

A MAN aged twenty-two was admitted into the Bristol Royal Infirmary on March 16th, 1894, suffering from tuberculous arthritis of the right elbow of six months' duration and of the right knee of two or three years' duration. He had, also, scars of old bone disease and abscesses of the right thumb and left index, ring, and little fingers. The second toe of the right foot was amputated under an anæsthetic two years ago. The patient was thin and rather anæmic; no albuminuria was present. On April 4th the chest was examined immediately before the administration of the anæsthetic; the heart showed no abnormal physical signs; the lungs were slightly depressed and there was impaired percussion resonance below the left clavicle, but no moist sounds. After consultation it was decided to excise the right elbow-joint. Chloroform was administered on a double fold of towelling on a wire frame open at the sides. After three or four inhalations the patient struggled slightly and held his breath. This was only momentarily, and passed off, leaving him quite conscious, with a quick and full pulse; he continued to inhale for three or four minutes, rather less than two drachms of chloroform being used, when he suddenly became cyanosed, the pulse stopped, and the breathing became deep and laboured, the pupils were dilated and fixed (no previous contraction had been observed). The head was lowered and artificial respiration resorted to, when the breathing improved, the cyanosis became less marked, but the pulse was still imperceptible. For ten or twelve respirations the patient breathed spontaneously, but as his breathing became stertorous artificial respiration was again proceeded with, and continued for nearly half an hour without effect, the patient making no sign of recovery. At the necropsy next day the brain and heart were found to be normal, there were a few pleuritic adhesions and an old cicatricial contraction at the apex of the left lung, both lungs were engorged, the kidneys were congested, a small mass of caseating tubercle being present in the left.

SINCE the Jenner collection has been exhibited at the First Avenue Hotel, Holborn, Mr. Mockler has been fortunate enough to acquire a very valuable addition to the Jennerian relics in the shape of all the minute books of the Jennerian Society, dating from 1802, the commencement, to the close of the society in 1809; a large number of pamphlets relating to vaccination, the whole MSS. relating to the parliamentary grants, besides other matters, and some fifty or sixty letters written by and to Dr. Jenner on important vaccine subjects. This important addition will be placed upon the table in the Jenner room early next week for the inspection of visitors.

THE London Post-Graduate Vacation Courses will commence on April 23rd and end on May 4th. The subjects this time will be Bacteriology, Pathology, and Hygiene. Entries should be made to Dr. Fletcher Little, 32, Harley-street, W. The Metropolitan Hospital, Kingsland-road, also intend to give a course of twelve lectures during the next quarter.

THE small-pox epidemic at Milan, which was deterring the travelling public from passing through that great *entrepôt* of the Brindisi route, is now, we are officially informed, "insensibile decrescenza." On Saturday last the cases per diem had fallen to 15 and on Sunday to 8.

THE annual dinner of the Army Medical Staff will be held at the Whitehall Rooms, Hôtel Métropole, London, at 7 30 P M, on Monday, June 18th, the Director-General of the Army Medical Department in the chair.

CHOLERA.

THE reports of this disease from Turkey are not altogether satisfactory or reassuring. From five to ten cases of cholera were recently reported to have occurred daily at Constantinople, for the most part among the Greek population. It is unfortunately the case—in Indian experience especially—that sporadic cases, or a limited but serious outbreak, of cholera in the spring is often followed by a worse and more extended manifestation of the disease later in the summer or autumn. Cholera, although it has not hitherto prevailed on any large scale in Turkey during this epidemic, has nevertheless exhibited a persistent vitality for many months at Constantinople. The *Levant Herald* of the 5th inst. reported that a serious outbreak of cholera had occurred at Yenikeui, and that Dr. Spiraki Pasha, a member of the General Board of Health, had been investigating the causes, disinfecting houses, and enforcing sanitary measures.

It is not, however, by isolation of cases and the disinfection of houses that cholera can be prevented. The application of these measures, however good in themselves, is too late. Precautions against the spread of an epidemic in any given population must be taken beforehand and in anticipation, with the view of putting the population in such a position that if cholera appears it shall not take root and develop, because it fails to find a fitting soil in the conditions that are present. It cannot be too often repeated that a good wholesome water-supply, protected from all contamination, good

drainage, the absence of overcrowding and of all foulness of air and soil are the only safeguards of known and tried efficiency. There is no royal road to attaining our aim and object. It takes time and money, and calls for the exercise of some thoughtfulness and painstaking on the part of a community and of the individuals composing it alike.

We notice that Mr. Heneage, M.P., recently asked the Chancellor of the Exchequer whether the Government had considered the very serious expenditure incurred by the local authorities of seaport towns and villages in carrying out the special precautions laid down by the Local Government Board to prevent the introduction of cholera and limit its spread, and whether the Government were prepared to aid the local authorities in defraying the cost. It is unfortunate that this question has arisen at a time when the Government have had to encounter unusual difficulties with regard to the Budget. It does not seem to us at all an unreasonable or illogical request, however, that the cost of special precautions taken by seaport towns and villages in the interest of the nation as a whole should be partly borne by the national Government. There are probably various directions in which public money is spent with less chance of promoting public benefit than in this direction of guarding the public health.

THE FACTORY ACT AND LAUNDRIES.

THERE are ugly rumours in the lobby of the House of Commons concerning the proposed improvements of the existing factory laws. Mr. Asquith is to introduce an Amendment Bill, but, if prevalent gossip is to be believed, one of the most necessary amendments will be left out. For the preservation of health, to say nothing of decency, it is very necessary to include laundries within the scope of factory legislation. The working classes themselves are aware of this necessity, though such legislation may, in many cases, affect their material interests. Undoubtedly much of the washing done in small cottages and homes affords a means of livelihood to the wives, daughters, and, above all, the widows of working men. The taking in of washing and mangling is an easy method of increasing the often too slender earnings of a workman's family; it is therefore with great hesitation that we should support an enactment that may reduce the means of livelihood enjoyed by industrious and hard-working members of the community. The greater the poverty and the humbler the position of such persons, the greater their moral claim to our solicitude, and the more jealously ought we to watch that nothing is done calculated to still further increase their difficulties and their poverty; nevertheless, while thus urging that, if favour and indulgence are shown, they should be towards the weakest and the most helpless, we cannot for a moment admit that the interests of a class, however poor and deserving, should be allowed to prevail against the interests of the community at large. In this instance it is beyond argument an absolute fact that washing of linen in small poverty-stricken lodgings and cottages is a source of great public danger. The Women's Trade Union League have just sent a circular to numerous labour organisations of all denominations, and many answers have already been received. One and all are in favour of including laundries in the Factory Act. This should mean, if the Factory Act is suitably amended and rigorously enforced, the suppression of thousands of petty laundresses. We hope this will not mean that the poor women who now take linen home to wash will lose their employment. It should lead to an extension and a great improvement of the accommodation afforded in public baths and washhouses, so that the washing that will no longer be done in the overcrowded and unhealthy homes of the poor can be taken to model washhouses where every precaution will be enforced and commodious premises and appliances supplied. The danger of home work in respect of washing linen has been very effectively shown in these columns.

Many years have now passed since we first agitated this question. It was on Aug. 18th, 1877, that we issued the Report of a Special Commission on the Spread of Disease through Laundries. The revelations which we then published, and which were the result of lengthy and careful investigations made in different parts of the metropolis, caused so wide an impression that within a few weeks no less than five companies were floated for the purpose of starting sanitary laundries where linen, it was stated, would be washed without danger of infection. Undoubtedly, since the appearance of our report, considerable improvements have been effected, and in many establishments much greater care is taken to prevent infection than was the case formerly. Nor is this progress confined to the metropolis. In most provincial towns we now find model steam and sanitary laundries. But in the course of the seventeen years that have elapsed since we raised this question the population has greatly increased, and we are in doubt whether the improvements effected are in due ratio with this increase of population. In any case, a great deal of washing is still done in miserable and dirty hovels where the linen may frequently be infected. We gave numerous instances of such infection. We found one cottage in Kensal New Town where washing was taken in from thirty families, and where the washerwoman's son was ill with small-pox. In Blackfriars-road a woman took in the washing of a children's school and of several families while three of her sons had small-pox. In Bedfordbury a woman occupying a single room had collected the linen from several neighbours to wash, though her children were sick from small-pox and lying on rags in her one single room. In a street of Peckham, occupied principally by laundresses, we found small-pox in thirty out of seventy houses. What our Commissioners said about this street is worth reprinting, for we are convinced that similar instances might yet be discovered:—

"In one case a woman who earned her living by working a mangle caught the disease and was removed to the hospital. Her daughters, however, still continued to mangle for some days before the doctor discovered them at work and stopped them. A poor washerwoman lived next door, and, on learning that small-pox was raging on both sides of the street, a gentleman who had given this woman his clothes to wash, chiefly in the hope of helping her, called and suggested that, for the moment, it was scarcely safe for her to take in linen. She, however, warmly rejoined that the worst of the danger was over, and that the small-pox had not been in her house, though it had done so much mischief among her neighbours. It happened, however, that this gentleman met the same evening a local practitioner from whom he accidentally discovered that a man suffering from small-pox had been removed from his laundress's house ten days prior to his visit. Further, this woman had actually washed nearly all his blankets while the small-pox patient was still in her house and delivered them back to her customer the day after the sick man had been removed—that is to say, long before any disinfection had been attempted. Thus every bed in this gentleman's house might have harboured the germs of disease; but, further, this woman was washing for a lady who had been confined at the same time as the small-pox broke out in her laundry, and she also washed a large number of table-napkins for a West-end restaurant. Thus even at our meals, if we escape being poisoned by our cook, we may catch small-pox from our table linen."

The above was a typical case, first, of a worthy and benevolent device to help a poor woman to earn her living, and of the dangerous deceit the poor very naturally practise when in fear of losing their livelihood. Such incidents are still of daily occurrence, though, with the spread of knowledge and education, and the improvement of our sanitary services, efforts to prevent such occurrences are, we flatter ourselves, more strenuous and effective. Nevertheless, the evil still exists and will continue so long as the principle we laid down, when dealing with similar evils and dangers arising out of the sweating system, is not universally recognised and applied. We are second to none in desiring to maintain the inviolability of the Englishman's home; but we urge that where work is done for the public there the public has a right to exercise control. We do not wish factory inspectors to force their way into private houses, but then private houses must not be converted into public workshops. Let the baker repose in the bosom of his family and enjoy in strict privacy all the charms of home life; but the law has already enacted that there is a right of entry and of inspection of the place where the baker bakes the bread which we eat. In the same way we do not wish to disturb the privacy of the laundress's domicile, but we demand that there shall be inspection of the place where she washes and dries the linen we wear. If the laundress chooses to hang our linen to dry in her bedroom this chamber loses its private character; it ceases to be her private home and

becomes to all intents and purposes a workshop, where work for the public is done, and where the public should have the right of inspection and control. After all, are we not the truest defenders of home life when we urge that a home should be a dwelling-house and not a workshop? The period of transition may be difficult and entail hardships and even pecuniary loss to many poor families, but in the long run the washerwomen will be much better off when they are finally compelled to work, according to the Factory Act, not more than sixty hours a week, and this in large and sanitary laundry establishments. Nor need this mean the total abolition of the casual washing done by poor women and by which they supplement the insufficient earnings of their husbands, &c. Every woman who washes need not enrol herself in some large steam laundry, where she would be treated as a factory hand, submitted to the same rigid discipline, and be thus compelled to abandon all her home life and duties. Surely it should be possible for poor women to occasionally take in a little washing; but, instead of doing such washing in their overcrowded and unsuitable houses, they might take it to the public baths and washhouses. Here convenience for ironing the linen should also be provided, and thus the danger of home work could be avoided, while the casual labour washing affords to needy and deserving people need not be altogether abolished.

EPIDEMIC CHOLERA AND THE INTERNATIONAL SANITARY CONVENTION OF PARIS.

IN our article on the above subject in THE LANCET of the 7th inst. we were enabled to place before our readers a clear and succinct account of the conclusions arrived at by the International Sanitary Conference at the end of their nine weeks' labours. As we have already said, we think the nation may be congratulated on the results of the Conference and on the international progress which has been made in the recognition of wider and wiser principles and ideas in regard to epidemics of cholera, as well as in the application of those hygienic measures which may now be said to be internationally regarded as expedient and worthy of practical trial in the mutual interest of every nation concerned.

The objects of the Conference were the sanitary control of the Mecca pilgrimage and the protection of the Persian Gulf, more especially with regard to their influence on the diffusion of cholera in Europe. Three series of precautionary measures have been discussed and adopted by the Conference: the first concern those to be taken at the ports in India and Dutch India in connexion with the pilgrims embarking for Mecca; the second series deal with the sanitary surveillance of the pilgrims in the Red Sea and the reorganisation of the Turkish lazarettos in accordance with the principles already laid down at previous Conferences; the third deal with the protection of the Persian Gulf, in which India is also largely interested; and as regards the subject which still remained to be dealt with—viz, as to how the various recommendations were to be put in operation in order that the work at the Conference should not prove fruitless, this has also been accomplished. We may here usefully make a few prefatory observations. It must be borne in mind that the records of the medical history of cholera in the past as much as comparatively recent events in Egypt, Europe, and India, have shown that quarantine affords no reliable protection against an epidemic of cholera. It is impracticable. Legislation which is opposed to the wishes and necessities of a population is sure to be evaded, and breaches are bound to be soon effected in all hard-and-fast quarantine restrictions. In spite of all the loss and inconvenience entailed by their attempted enforcement—in restricting trade and commerce and movement—those countries in which these restrictions were applied have not been better off in respect of invasions of epidemic cholera than others in which such measures were not adopted. The importance, moreover, of the Red Sea route as a road by which cholera reaches Europe, when tested by the facts of past experience, is probably exaggerated. It is not, at any rate, the route by which cholera usually travels to this country. No successful attempt has been hitherto made to connect such epidemics with the arrival of ships from India. The Red Sea route to India has been in existence since 1842 and that by the Suez Canal since 1869, and the intercourse between Great Britain and India by this route has been constantly going on, and to an extent out of all proportion to that of other countries; but, be this as it may, it seems to us that one of the most important and pressing measures to be remedied in this direction rests with the Turkish Government in removing the very grave sanitary evils existing at Cameran and in connexion with the pilgrim route to Mecca. The disastrous outbreak of cholera that occurred at Mecca and Jeddah and in the valley of Mouna in the summer of 1893 cannot be forgotten. The effect of local and localising influences in times of cholera prevalence is always strikingly manifested, and it was never more so than in the Mecca pilgrimage of that year. Bad water, overcrowding, and foulness of soil and surroundings are certainly the nurses, if not the parents, of cholera. Moreover, it must not be lost sight of that if importation be an essential factor in cholera causation it may be said that France has not on all occasions been indebted to Turkey or Persia for her cholera, but she has probably obtained it from Tonkin and thereby made herself a source of danger in Europe. The sanitary measures with which we must encounter cholera are happily not only useful in that disease only, but are of universal application and tend to diminish the incidence of other epidemics and all forms of disease.

But to return to the results of the Paris Conference. The strict medical inspection of every person going by a pilgrim ship from Indian ports was at once unanimously agreed to—indeed this is already done at Bombay. The disinfection of contaminated or suspected articles and the prohibition of all affected individuals from embarking were also unanimously agreed to, as well as the provision of a sufficient supply of potable water and properly qualified medical officers and disinfecting apparatus for pilgrim ships.

With regard to the question of the detention of pilgrims for five days' observation when there is any cholera at a port, the delegates from Great Britain and British India were fully justified, in our opinion, in their opposition to it. Besides being virtually impracticable, on account of its difficulties and inconvenience, its effect would be the very opposite of that intended, for the sooner pilgrim ships put to sea under such circumstances the less is the risk of cholera cases subsequently appearing. This matter was satisfactorily arranged, however, by a wise compromise by which the Netherlands Government, on the one hand, are allowed to count the time taken in collecting the pilgrims from the various ports of Java as equivalent to the five days' observation at the port of departure; and, on the other hand, the Government of India having resolved to provide a hospital near the port of Aden, where the pilgrim ships would undergo medical inspection, and any cholera cases would be removed to the hospital, it was agreed that a similar understanding should be made applicable in respect of the voyage between Indian ports and Aden.

The proposal to prevent Mahommedan paupers from going on pilgrimage to Mecca is stated to have led to much discussion. Dr. Proust had declared that they were forbidden to go, by Mahommedan law; but in this he was incorrectly informed, for the Turkish delegates declared, on the highest authority, that the pilgrimage to Mecca was one of the five things incumbent on every good Mussulman to perform. This declaration showed that the Government of India would be interfering with the religious liberty of its sixty millions of Mahommedan subjects if it accepted this proposal. The delegates of Great Britain and Turkey consequently voted against it, but those of the other Powers voted in its favour.

With regard to the regulation for pilgrim ships several beneficial changes were discussed and adopted. The regulation proposed by the Conference as to the amount of superficial area to be given was nineteen square feet and eight square inches. Increase of space is unquestionably a good sanitary measure; but there are, unfortunately, other considerations which have to be taken into account. An increase of space to this extent would not in reality be given at the expense of the Government, but of the pilgrims, who would have to pay for it in increased amount of passage money. The delegates from India and Great Britain proposed to increase the space from nine to fourteen square feet and nine square inches, which was finally agreed upon. Some increase of hospital accommodation on shipboard, with an increased allowance of water per head, were also accepted by the Conference.

As regards the manner in which pilgrim ships from Indian and other eastern ports are to be dealt with on arriving at

Cameran, the rules laid down for the three classes—*indemnes*, *suspects*, and *infectés*—are a great advance on the present ten days' detention in every case, even when there has been no sickness on board, and will prove a decided boon to pilgrims from India.

Great Britain reserved its vote on the whole question of the measures proposed for the Persian Gulf. The Conference declined to entertain the question of the creation of an International Sanitary Board at Teheran. The Convention was signed by all the delegations except those of Turkey and the United States. Great Britain made only three reservations—viz., as to the prohibition of pauper pilgrims; the space to be given per head on board ship; and the whole question of the Persian Gulf. The second of these was, however, arranged subsequently to the signing of the Convention.

A good deal of discussion arose as to the inadequacy of the methods and procedure of the Indian Government in its efforts to diminish cholera, in which M. Monod, the Director of Public Health in France, and Surgeon-General Cuningham, the delegate for British India, took prominent parts. It is quite true, as alleged by M. Monod, that the mortality from cholera in 1891 and 1892 was excessive, and that Indian statistics are, moreover, full of errors; but the inferences apparently intended to be drawn from those facts are nevertheless incorrect. Into this subject, however, we cannot enter now, but it is pertinent to remark that France is unable to furnish sanitary and statistical information regarding her colonies of Algeria and Tonkin, and even in France itself the causes of deaths are registered only in towns of over 5000 inhabitants.

The delegates from this country deserve, in our opinion, very great credit for the ability, tact, and judgment which they displayed, and it may be well to add that they were entirely in accord as regards any practical measures proposed by the Conference. Surgeon-General Cuningham's knowledge and experience of India proved very useful in several respects as regards that country. It is quite probable that the delegate for the Government of India and his colleagues might have held divergent views on several points connected with the relation of India to Europe, and the epidemiology and causes of cholera, but practically this made no difference whatever. Every proposition was discussed on its merits, by the light of history and facts, and with a practical aim and object in view. Continental nations are disposed to place greater reliance on measures of quarantine, and Great Britain on measures of hygiene. Reasonable and practicable precautions may rightly be adopted in both directions, and the International Conference has done much to effect this.

The country that has had the latest and most extensive acquaintance with epidemic cholera is Russia, and the officially recorded experience of the army medical service of that country, if it teaches nothing particularly new, is instructive nevertheless. It was found that quarantine was useless in checking the spread of cholera; that "inspection points" on lines of communication, although very useful in providing early aid for attacked persons, did not succeed in checking the spread of infection; that the concentration of large bodies of people was particularly harmful during the epidemic, whereas the splitting up and dispersion of camps, crowds, and bodies of troops, on the other hand, proved to be a most important and valuable measure in checking its progress; and that the protection of water-supplies and sanitation—in its broadest sense, as applied to site and locality and communities, and in its narrowest and most restricted sense, as applied to the personal hygiene of the individual units composing them—is one of the most reliable safeguards in times of epidemic cholera.

THE INTERNATIONAL EXHIBITION AT ROME.

[SECOND NOTICE.]

AT the exhibition which was held at the Palazzo di Belle Arti the collections of scientific apparatus from all parts of Europe and America were attractively arranged. The Palace of the Fine Arts lends itself to the most favourable display of the goods which were submitted by the various merchants for the inspection of the members of the Congress. The entrance-hall was hung with beautiful maps and drawings showing the drainage and water-supply of all the towns and cities in Italy, and alongside of them were hung plans showing the old systems of drainage. The Central Hall contained models of a lunatic asylum, an animal-lymph station from Germany, a sewage farm, and a pumping station. Here was also placed a beautiful model of all the buildings of the new Policlinico at Rome, a photograph of which we were enabled to reproduce in a former number.

The Committee expressed to our representative their disappointment that English firms had not shown more spirit in coöperating with them with greater vigour. The responses to their circular of invitation from the other side of the Channel was tardy, and presented by their scarcity a striking contrast to the wealth of display brought together from other parts of the globe. The German exhibits deserve high commendation, not only for their number but for the excellence and variety of the goods exhibited.

It would be a task far too tedious to attempt to enumerate even the most striking of the exhibits. As we have before mentioned in our first article on this portion of the International Congress, what attracted most notice was the display of ancient manuscripts of the old followers of the Æsculapian cult, which have been collected by Professor Biagi, the well-known antiquarian, and arranged in chronological order on the walls of a very elegant room. Of these documents one is a representation of the first female medical practitioner, Laura Maria Catherina Bassi, of whom there is any record. She is depicted as reading her thesis before the Faculty of Bologna in the fourteenth century. The members of the Faculty are seated at the end of the room, opposite the candidate, and are evidently discussing the subject as she proceeds. It was most interesting to find collected in one room so many rare and ancient volumes, pictures, charts, and illuminated manuscripts of the most beautiful order, many of which up till now have been unheard of. This collection of valuable manuscripts had been brought from all the Italian libraries. Many of them are unknown.

In this same room were exhibited ancient medical instruments, specula, knives, cupping instruments, instruments for diseases of the eye, scissors, spoons, and the whole of the armamentarium of the surgeon of ancient times. Sommer of Naples had prepared a case of these old instruments, showing them in their burnished condition, as they would be when used by the medical men in those old days. Other cases in this room contained "donaria," or votive offerings, presented to the god of Health by those who were afflicted with diseases. They are interesting as throwing light on the anatomical and physiological knowledge of those periods. They were generally models of the portion of the body which was diseased and which it was desired to have cured. These models were frequently very tastefully painted and in their original condition must have conveyed a more accurate description of the disease than would be anticipated from appearances now. Models of animals also were presented as votive offerings, the pig being representative of some scrofulous disorders. The pig was sacred to the goddess Carna, who presided over the heart and entrails. This animal was sacrificed to Carna on June 1st, and those suffering from tuberculous or intestinal disease fancied they received benefit from consuming the flesh and particularly the fat of the pig. One of the models represented a pig with a small child on its back. These models are the product of a rude art, but are interesting from the various types they represent. Some of the terra-cottas represent the internal organs—the stomach, the liver, the heart, and the uterus—giving evidence of anatomical ideas which could by no means be called crude, taking into consideration the fact that in those early times dissection of human bodies was never permitted. One of the most interesting was the show-case representing the mode adopted by the Etruscan dentists for inserting incisor teeth. They took the tooth of an ox and cut it down in such a manner as to resemble two human teeth. A collection of ancient Egyptian relics had been forwarded by Grant Bey and displayed in the hall among the ancient Roman medical antiquities.

The exhibit of Messrs. Burroughs and Wellcome occupied a larger space in the exhibition than that of any other pharmaceutical firm. Not many articles in large bulk were shown, but the variety and the convenience of the preparations could not fail to interest the physicians who visited the exhibition. The tabloids are popular among the profession in Italy and are largely prescribed by them. At this exhibition the newly devised tabloids of cerebrinine from the brain of the sheep, also from the brain of the ox, were shown. The tabloids of orchitic fluid were also exhibited for the first

time at any large exhibition. On the occasion of the Royal visit to the exhibition the representative of the firm, Mr. E. De Giovanni, was presented to the King by Professor Pagliano. The King examined closely the Congo medicine chest, and the firm presented it through him to the medical charities of Rome. He accepted the chest with hearty thanks on behalf of these charities. The new tea tabloids were shown to the Queen, who accepted a number for her private use. By using these tabloids the economy effected would be considerable in the case of the poor, especially in Italy, where tea is expensive. Such cheapness as 100 small cups of tea for 6*d*. is a luxury almost undreamt of in Italy. The tax of 1 fr. 50 c. per kilo would increase the cost of the tabloids in Italy somewhat, but still leave an economical margin. This firm also exhibited the Kepler products—viz., malt extracts, solution of cod-liver oil in malt, Kepler essence, emol keleet, ophthalmic tabloids, hypodermic tabloids, and thyroid gland tabloids.

Messrs. Oppenheimer, Son, and Co. exhibited a fine collection of palatinoids and bipalatinoids, and a series of digestive ferments prepared by the Weber process. Among their exhibits were pepsinum (Oppenheimer), pancreatin, amylopsin, trypsin, diastase, and granular rennin. The bipalatinoids of carbonate of iron attracted a good deal of attention on the part of those who were not already acquainted with the preparation, being useful combinations of the ferrous carbonate—i.e., ferrous carbonate with cascara sagrada or nux vomica, &c. Phosphate and arseniate of iron prepared in the same way were likewise exhibited.

In the Food and Drink section the exhibits that most attracted the visitor's attention were those relating to the sterilisation of milk, and the diabetic preparations deserve passing notice.

The oleo-refractometer shown by Reichert and Nemetz of Vienna is a very handy and cheap centrifugalising machine, the motive power for which is obtained either by air or water.

The collection of mineral waters was a large one. The waters from the chief continental springs were exhibited, those from Italian watering-places being very prominent. Harrogate waters were likewise represented.

Messrs. Vianini of Rome exhibited their several forms of cement floors for hospital wards, operating rooms, and other requisites of hospital construction. The sanitary pail exhibited by Messrs. Ernst of Turin shows a move in the right direction.

Interesting bacteriological specimens, mounted for purposes of demonstration, were shown by Professor Kral of Prague. The cultivation chamber consists of a glass flask in shape like a carboy, with the sides flattened. In the same section Dr. Blum of Frankfort showed a number of pathological specimens, flowers, &c., that had completely retained their colour after being preserved in formol.

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the Committee of the Association of Fellows of the Royal College of Surgeons of England was held last week, Mr. George D. Pollock, F.R.C.S., President, in the chair. There was a large attendance. The minutes of the last meeting having been read and confirmed, Mr. Percy Dunn, hon. sec., read letters of regret at inability to be present from certain members of the committee. He also reported that, in accordance with the instructions of the subcommittee, which met for the purpose of drafting a letter to the Fellows on the 28th ult., he had issued in the early part of the following week the circular letter, a copy of which he now laid on the table.

The letter set forth the concessions which had been obtained through the action of the Association—namely, (1) the appointment of scrutineers to take the ballot at the election of the Council; (2) the discontinuance of the payment of a fee at election by members of the Council and by members of the court of examiners; (3) the appointment of a treasurer and the auditing of the accounts by a professional auditor; (4) the holding of an annual general meeting of Fellows and Members, at which a report from the Council should be presented and discussed; (5) the suspension of the confirmed minutes in the hall of the College for the inspection of the Fellows and Members; (6) meetings to be held by direction of the President or Council or on a requisition signed by thirty Fellows or Members; (7) reduction of the number of signatures required for nomination of candidates for the Council from six to three; (8) a common room for the use of the Fellows and Members; (9) meetings of the Fellows, twice a year, separately from the Members. The letter is signed on behalf of the Committee of the Association of Fellows of the Royal College of Surgeons, England, by George D. Pollock, President, Timothy Holmes, Vice-President, and H. Percy Dunn, hon. secretary.

He further reported that, in consequence of the statement of the work of the Association contained in the circular, he had received several communications from Fellows expressing the desire to join the Association. The question of summoning a general meeting of the Association having been discussed, it was decided to hold the annual meeting on June 14th. The names of the new applicants for membership of the Association were proposed, seconded and approved. Some further matters relating to the organisation of the Association having been determined the committee adjourned.

LORD CROMER'S REPORT ON EGYPT, 1893.

THE British Consul-General's reports on Egypt are always interesting, presenting as they do in epitome a clear and comprehensive account of the actual condition of the country, and the progress made in the various administrative departments of the Government during the preceding twelvemonth. The report lately presented to Parliament by command of Her Majesty is no exception to the rule, and it is, moreover, rich in subjects bearing reference to medical and sanitary matters.

Last year we made the observation: "All reforms and improvements depend on the state of the public treasury." This is undoubtedly true, but in the present case, though the money exists, many important improvements and reforms are perforce in abeyance, because, owing to political causes, there is no less a sum than £3,554,000 lying idle under the form of general reserve fund, special reserve fund, and conversion economies. Lord Cromer's remarks on this subject are that "it is useless to consider the question wholly on its financial merits. The difficulties which have stood in the way of employing the money are political, not financial." The condition of Egyptian finance may be pronounced to be eminently satisfactory. The revenue is elastic, the expenditure is under effective control. The burden of taxation has been largely reduced of late years. Remedies are being gradually and prudently applied to such abuses as still exist.

DRAINAGE OF CAIRO.

To the ever-increasing army of tourists this is one of the most important questions in Egypt, but, unfortunately, there seems to be little prospect of a satisfactory solution. In 1889 Mr. Baldwin Latham proposed to drain the entire city at a cost of £565,700, his scheme including a sewage farm and an allowance of £50,000 for contingencies. The International Commissioners, however, while of opinion that Mr. Latham's proposal "was an elegant solution of the problem at issue," nevertheless rejected it because "it had the fault of being very costly," and put forward a project of their own which they said would not entail the expenditure of more than £500,000. In commenting on the international project last year we observed, "220 miles of sewers with a sufficient fall, constructed of brickwork or masonry, and supported by adequate foundations, cannot be established in Cairo for £500,000, or anything approaching that sum." It would seem that these remarks were perfectly correct, for in an appendix to Lord Cromer's report, drawn up by Mr. Garstin, we are informed that "the project for the drainage of the town of Cairo was brought to completion in 1893 by M. Barois, Secrétaire-Général of the Public Works Ministry. The detailed estimate for this project, as prepared by him upon the lines indicated by the International Commission in 1892, amounts to £1,010,000, or more than double that of the Commissioners. ..... The detailed project was submitted in September, 1893, to the members of the International Commission, and received their unanimous approval." We adhere to our opinion that massive sewers of large calibre,

as proposed by the Commissioners, are quite unsuitable to the water-logged, unstable, alluvial plain on which the greater part of Cairo stands. The experiment has been tried, and, with the example of the former sewers which were destroyed in 1887 before them, it is hard to comprehend how competent engineers can recommend the repetition on a larger scale of a system already shown to be utterly impracticable. Apart from the technical question there are some other

OBSTACLES IN THE WAY.

Before Cairo can be drained two laws must be passed—one empowering the Government to enforce the necessary sanitary regulations required to ensure the proper working of the drainage scheme upon persons of every nationality; and, secondly, a law for facilitating the acquisition of land required for public purposes. Commenting on this phase of the question Mr. Garstin observes: "The assent of the Powers not having been as yet obtained, it is useless to consider the question of the execution of the drainage project." Possibly this may only mean delay, but taking everything into consideration, the doubling of the estimate, the apathy of the population in general, European as well as native, towards sanitary matters, and the Herculean task of inducing the Powers to act in concert, there would seem to be grave danger that this most important undertaking has been relegated to the Grecian kalends, or else till such time as an epidemic may compel attention.

SALT DEPARTMENT.

Seeing that perfect health cannot well be maintained without salt, it seems a pity that a more suitable way of raising the revenue cannot be found than by the infliction of this most unpopular tax. The net gain to Government is only about £120 000 per annum, and it is scarcely worth while for the sake of such a comparatively small sum that the trade in a natural product should be interdicted.

PRISONS DEPARTMENT.

Lord Cromer commences this section as follows: "I have on many previous occasions alluded to the very satisfactory progress which during the last few years has been made in the organisation of the Egyptian Prisons Department. Four excellent convict prisons have been built, mainly by the prisoners themselves. ..... The Ghizeh Prison also, in which the system of remunerative industrial labour has been very successfully introduced, supplies boots, rugs, saddlery, and other articles for the army. During the past year several useful additions, such as hospitals, disinfecting establishments, and barracks, have been added to the existing prisons. At the same time much remains to be done before the prison system of Egypt can be pronounced in a satisfactory condition."

There is no British official in Egypt who has done better work than Crookshank Pasha, the head of the Prisons Department, nor any who have had less adequate means given them to work with. The Prisons Budget has always been starved down to the lowest possible point, and yet when typhus fever or some other unavoidable fatality ensued the Director-General was freely blamed. It is satisfactory to find that at last the labours of this energetic administrator are being duly recognised. Four more special convict prisons are required at Zagazig, Tantah, Keneh, and Alexandria. The Mudiriyeh prisons are mere makeshifts, where innocent men arrested on suspicion are huddled together with hardened criminals, and where, owing to unsuitable construction and permanent overcrowding, it is impossible to enforce even the rudiments of hygiene. "In spite of all the efforts made by the prison administration during the year," writes Crookshank Pasha, "to increase the accommodation for the reception of prisoners the prisons remain as dangerously overcrowded as ever, and whether it is that justice is becoming more extended over the country, that the police are more zealous and more efficient at their work, or that the criminal classes are steadily increasing, the fact remains the same, that the number of prisoners we have to deal with increases every year. Our present daily average of individuals in prison is over 7000." To this Lord Cromer replies: "The difficulty of applying a remedy to the state of things thus described by Crookshank Pasha is purely financial. For the time being the Egyptian Treasury cannot meet the requirements of the Prisons Department, but I can conceive no better object to which the surplus money of the general reserve fund could be devoted than the construction of suitable prisons in Egypt."

(To be concluded.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY MEETING of the Council was held on the 12th inst., the President, Mr. J. W. Hulke, F.R.S., being in the chair.

The recommendation of the Jacksonian Committee that "Tetanus" should be the subject for the Jacksonian Prize for the year 1895 was adopted.

The regulations with respect to the Walker Prize [1] recommended by Mr. Hutchinson's committee to the Council were made into standing rules.

The report of the John Tomes Prize Committee was presented, in which the following regulations were recommended for adoption:—"The prize, which is to be triennial, shall be open to any person registered under the Dentists Act of 1878 who shall hold a diploma in Dental Surgery of one of the licensing bodies in Great Britain or Ireland, and is to be awarded for original or other scientific work, done either partially or wholly within the triennial period, on the subjects of Dental Surgery and Pathology, Dental Anatomy and Physiology (including Histology), or Dental Mechanics. No essays shall be submitted in competition for the prize in the case of the first award, which shall be for the period ending Dec. 31st, 1896." The report was approved and adopted.

The committee on by-laws presented a report, in which they recommended that Clauses 5 and 6 of Section 4 (relating to the election of members of the Council) shall be altered to the effect that voting papers should be sent to all Fellows and that the voting papers may be received at the College up to the commencement of the election. The report was approved, but the alterations cannot come into force at the next election on account of legal formalities.

The President stated that the term of office of Mr. J. McCarthy on the Court of Examiners had expired, and that the vacancy thus created would be filled up at the next meeting of the Council on May 10th. Mr. McCarthy will offer himself for re-election.

Mr. Chauncy Puzey, of Liverpool, whose diploma of Membership was dated July 31st, 1863, was elected a Fellow under the section relating to the election to the Fellowship of Members of twenty years' standing.

The Council had under consideration several cases of alleged misconduct.

The President reported that at the meetings both of the Fellows and of the Members held last month resolutions were adopted approving of the general principles of the draft charter of the proposed Gresham University. It was resolved "that the Council of the Royal College of Surgeons of England do cordially approve of the general provisions in the report of the Gresham University Commission, particularly in so far as they relate to the said College, regarding them as being in accordance with the principles which the College has hitherto affirmed and accepted, and as constituting the most comprehensive and academic scheme hitherto proposed."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Batley Urban Sanitary District.—The general and zymotic death-rates of this district for 1893 were both high, the former being 24·21 and the latter 5·19 per 1000. This high rate is to be in large part accounted for by a heavy mortality from measles and infantile diarrhœa, the deaths under the heading "diarrhœa and dysentery" being more than twice as numerous as in any of the five preceding years and including six deaths from "cholera nostras." Dr. Alfred Swann speaks very highly of the value of notification, and he reports that there is good prospect of a permanent isolation hospital being shortly erected. In referring to the water-supply of the district, he states that a large

[1] THE LANCET, March 24th, 1894, p. 755.

number of cases of lead-poisoning have come to his notice, and it seems that in all of the thirty-one samples of water submitted to analysis lead was found in quantities varying from a "faint trace" to 0·98 grain per gallon. Several of these samples were analysed at a time when the reservoirs were low and the water contained a large amount of clay in suspension, but under all circumstances some lead appears to have been taken up from the pipes. Dr. Swann observes that he has met with cases of lead-poisoning from Dewsbury, Soothill, Heckmondwike, and Birstal.

King's Norton Rural Sanitary District.—Dr. Francis Hollinshead, in presenting to his sanitary authority his twenty-first report, impresses upon them the value of vaccination and revaccination, and among other arguments he points out that during his long and varied experience he has never had to treat a case of small-pox in a revaccinated person. In connexion with scarlet fever Dr. Hollinshead states that among 166 cases removed to hospital no deaths occurred, while of 17 treated at home 2 died. There was during April last a localised outbreak of scarlet fever at cottage homes, which was apparently due to the consumption of milk infected by means of a milker who pursued his vocation while suffering from the disease. We are afraid that Dr. Hollinshead's remark that "there is no disease of the preventible class more under control from a sanitary point than diphtheria" will not meet with universal acceptance. Certainly, well-marked cases of diphtheria should be easily controlled by proper isolation, &c., but we are afraid that the difficulty of recognising mild forms of the disease and the uncertainty with regard to the nature of co-existing sore-throats will always present a practical difficulty in the way of combating diphtheria. Dr. Hollinshead states that he has experienced great difficulty in getting the public to notify when houses in which cases of infectious disease have been treated are ready for disinfection, and he has therefore drawn up a circular giving to householders plain instructions and reminding them of their responsibilities. With this circular is supplied a form to be filled up and sent to the sanitary inspector when the patient is, in the opinion of the medical attendant, free from infection. Dr. Hollinshead also advises his sanitary authority to procure a shelter for the temporary lodging of persons whose houses are being disinfected.

Downham Rural Sanitary District.—Considerable improvement has, Mr. Kirkham reports, been made in his district during 1893 in regard to the shallow wells from which a large number of inhabitants derive their water-supply; and wherever privies have been found in a position likely to pollute the wells they have either been removed or converted into pail-closets. During the year under review fourteen certificates under the Public Health (Water) Act were granted. In discussing the removal of refuse Mr. Kirkham points out that, according to the provisions of section 36 of the Public Health Act, 1875, all houses should be provided with ashpits furnished with proper doors and coverings; but, he adds, "I am not aware of a single ashpit of this description in the district." There were during last year five cases of enteric fever in houses which obtained their water-supply from the river Ouse, and the medical officer of health thinks that the attacks were due to the consumption of this water. Mr. Kirkham is to be congratulated on having persuaded his sanitary authority to meet more frequently, instead of, as is often the case, considering sanitary matters at the end of all other business, and at a time when but scant attention is paid to them.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6340 births and 3877 deaths were registered during the week ending April 14th. The annual rate of mortality in these towns, which had been 20·0 and 19·6 per 1000 in the preceding two weeks, further declined last week to 19·3. In London the rate was equal to 19·3 per 1000, while it averaged 19·4 in the thirty-two provincial towns. The lowest rates in these towns were 11·6 in Huddersfield, 12·6 in Croydon, 13·5 in Leicester, 15·6 in Portsmouth, and 15·8 in Derby; the highest rates were 21·8 in Birmingham, 22·8 in Manchester, 23·6 in Blackburn, 24·7 in Liverpool, and 31·9 in Wolverhampton. The 3877 deaths included 528 which were referred to the principal zymotic diseases, against 612 and 543 in the preceding two weeks; of these, 187 resulted from measles, 142 from whooping-cough, 72 from diphtheria, 50 from scarlet fever, 38 from diarrhœa, 33 from "fever" (principally enteric), and 6 from small-pox. No fatal cases of any of these diseases occurred last week in Brighton or in Halifax; in the other towns they caused the lowest death-rates in Plymouth, Gateshead, and Sunderland, and the highest rates in West Ham, Cardiff, Wolverhampton, Birmingham, and Sheffield. The greatest mortality from measles occurred in London, Preston, Birkenhead, Leicester, Birmingham, and Wolverhampton; from scarlet fever in Wolverhampton; and from whooping-cough in Birkenhead, Sheffield, and Cardiff. The mortality from "fever" showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 50 in London, and 3 each in West Ham, Cardiff, and Leeds. Three fatal cases of small-pox were registered in Birmingham, 2 in West Ham, and 1 in Portsmouth, but not one in London or in any other of the thirty-three large towns. There were 102 small-pox patients under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 14th inst., against 85, 81, and 95 at the end of the preceding three weeks; 31 new cases were admitted during the week, against 17, 14, and 26 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2128, against 2103, 2117, and 2109 on the preceding three Saturdays; 261 new cases were admitted during the week, against 214 and 255 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 397 to 314 in the preceding three weeks, further fell to 304 last week and were 102 below the corrected average. The causes of 59, or 1·5 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Cardiff, Bolton, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Halifax, Sheffield, and Newcastle-upon-Tyne.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased from 18·7 to 21·2 per 1000 in the preceding three weeks, declined again to 19·7 during the week ending April 14th, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 12·5 in Greenock and 15·4 in Dundee to 21·7 in Leith and 23·0 in Glasgow. The 563 deaths in these towns included 34 which were referred to whooping-cough, 10 to diphtheria, 6 to scarlet fever, 6 to diarrhœa, 5 to "fever," 2 to measles, and one to small-pox; in all, 64 deaths resulted from these principal zymotic diseases, against 85 and 59 in the preceding two weeks. These 64 deaths were equal to an annual rate of 2·2 per 1000, which was slightly below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 39 and 33 in the preceding two weeks, were 34 last week, of which 18 occurred in Glasgow, 6 in Edinburgh, and 4 in Leith. The deaths referred to diphtheria, which had been 5 in each of the preceding two weeks, increased to 10 last week and included 5 in Glasgow and 4 in Edinburgh. The 6 fatal cases of scarlet fever exceeded by 2 the number in the preceding week and included 2 in Glasgow, 2 in Edinburgh, and 2 in Aberdeen. The deaths referred to different forms of "fever," which had been 9 and 6 in the preceding two weeks, further fell to 5 last week, of which 4 occurred in Glasgow. The fatal case of small-pox was recorded in Leith. The deaths referred to diseases of the respiratory organs in these towns, which had been 113 and 125 in the preceding two weeks, declined to 107 last week and were 19 below the number in the corresponding week of last year. The causes of 42, or more than 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 32·2 and 23·1 per 1000 in the preceding two weeks, rose again to 26·1 during the week ending April 14th. During the thirteen weeks of last quarter the death-rate in the city averaged 31·5 per 1000, against 21·2 in London and 18·5 in Edinburgh. The 175 deaths in Dublin during the week under notice showed an increase of 20 upon the number in the previous week and included 9 which resulted from

the principal zymotic diseases, against 15 and 17 in the preceding two weeks; of these, 3 were referred to "fever," 3 to diarrhœa, 2 to whooping-cough, 1 to measles, and not one to either small-pox, scarlet fever, or diphtheria. These 9 deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 3·2 in London and 2·5 in Edinburgh. The deaths referred to different forms of "fever," which had increased from 1 to 6 in the preceding three weeks, declined again to 3 last week. The fatal cases of whooping-cough, which had been 5 in each of the preceding two weeks, declined to 2 last week, a smaller number than in any week since August last. The 175 deaths registered in Dublin last week included 28 of infants under one year of age and 49 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons slightly exceeded the numbers recorded in the preceding week. Seven inquest cases and 3 deaths from violence were registered; and 69, or more than a third, of the deaths occurred in public institutions. The causes of 10, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-COLONEL GRAVES, Administrative Medical Officer at Meerut, has proceeded to England on leave of absence. The course of instruction in ambulance drill of the successful candidates who passed out of Netley in January last having been brought to a close at Aldershot, the following officers have been detailed to the districts specified: Surgeon-Lieutenants Fox, Green, and Tibbits to Ireland; Surgeon-Lieutenants Master and Dansey-Browning to Scotland; Surgeon-Lieutenant Fleury to Netley; Surgeon-Lieutenant Prynne to the Southern District; Surgeon-Lieutenant Clark to Woolwich, and Surgeon-Lieutenant Barnett to the Eastern District. Surgeon-Lieutenants Boyle and Cameron remain at Aldershot for duty. Surgeon-Major Chester and Surgeon-Captain Gray have arrived in England on leave from Egypt, and Surgeon-Captain Burrows has returned to Egypt. Surgeon-Major Morgan has left the West Coast of Africa on completion of his tour of service. Surgeon-Major Morris has been granted leave to England from Bermuda.

ARMY MEDICAL STAFF.

Surgeon-Lieutenant-Colonel Breame Weston Fowler retires on retired pay.

INDIA AND THE INDIAN MEDICAL SERVICES.

The following appointments are announced: Surgeon-Lieutenant-Colonel W. A. C. Roe to officiate as Sanitary Commissioner of the Punjab, until further orders. Surgeon-Colonel C. McDonagh Cuffe, C.B., A.M.S., having been appointed to the Administrative Medical Staff of the Bengal Command, to be Principal Medical Officer, Allahabad District. Surgeon-Major T. H. Sweeny, Civil Surgeon, Benares, to hold Visiting Medical Charge of the Jaunpur District, in addition to his other duties, until further orders. Surgeon-Captain Melville, ordered from England on fresh tour, has been posted to general duty, Mhow District. Surgeon-Lieutenant Read, on arrival from England, has been posted to general duty, Aden District. The services of Brigade-Surgeon-Lieutenant-Colonel D. O'Connell Raye, M.D., Professor of Surgery, the Medical College, Calcutta, and *ex-officio* first Surgeon to the College Hospital, are replaced at the disposal of the Military Department. The services of Surgeon-Captain W. R. Clark M.B., I.M.S. (Bengal), are replaced at the disposal of the Government of Punjab. The services of Brigade-Surgeon-Lieutenant-Colonel A. Stephen, M.B., Sanitary Commissioner, Punjab, are placed temporarily at the disposal of the Military Department. Surgeon-Captain Holyoake has been transferred from general duty, Mhow District, to general duty, Bombay and Deesa District. Surgeon-Captain S. E. Prall and Surgeon-Captain H. Herbert have respectively delivered over and received Charge of the Kaira District Gaol. It is expected that Brigade-Surgeon-Lieutenant-Colonel J. F. Keith, M.D., will retire from the Service during the month of May next. Surgeon-Lieutenant-Colonel Temple Wright, Civil Surgeon of Shahjahanpur, retires in June on completion of twenty-five years' service. Surgeon-Captain Leishman is granted leave.

NAVAL MEDICAL SERVICES.

Fleet-Surgeon James L. Sweetman and Surgeon Richard L. Price have been appointed to the *Repulse*. Surgeon M. J. O'Regan has been appointed to Hong Kong Hospital.

VOLUNTEER CORPS.

1st Devonshire (Western Division, Royal Artillery): Surgeon-Captain J. T. Thomas, from the 1st Monmouthshire Volunteer Artillery, to be Surgeon-Captain.—1st Monmouthshire: David Theophilus Richards, M.D., to be Surgeon-Lieutenant.—1st Newcastle-on-Tyne: Surgeon-Major R. F. Cook, M.B., to be Surgeon-Lieutenant-Colonel.—4th Volunteer Battalion, the Durham Light Infantry: Surgeon-Captain W. J. Brown, M.B., resigns his commission.—9th Lanarkshire: Surgeon-Captain R. J. Stewart resigns his commission.

THE OPIUM COMMISSION.

It is anticipated that this commission will cost 20 lakhs of rupees in India, and £1500 in England, of which half will be charged to India. This amount would of course have been much larger had the commissioners been paid for their services. The Indian papers regard it as much to their credit that they gave without reward so much time and labour to what they no doubt conceived was the service of India. The complaint is that the commission was unnecessary, that it costs too much when it costs anything, and that those who called for it should consequently pay the bill.

GIBRALTAR WATER-SUPPLY.

Those who know Gibraltar are aware that the water-supply has always been a difficulty. The British authorities had applied to the Spanish Government for the concession of a supply of potable water from Spanish territory, but the negotiations are stated to have fallen through, as it is considered that in the event of war the concession would constitute an advantage to Great Britain and the reverse to Spain. We should have thought the exact contrary, and that the country which controlled the water-supply of a place would have possessed a great advantage in case of war.

THE LATE SURGEON-MAJOR PARKE.

We understand that an application was made to Mr. Gladstone just before his retirement on behalf of the family of the late Surgeon-Major Parke, of Central African fame. The memorial was signed by Lord Roberts, Sir Donald Stewart, Sir Archibald Alison, Sir Alfred Lyall, Sir William Jenner, Sir James Paget, the Duke of St. Albans, and Mr. H. M. Stanley. It appears that the late Surgeon-Major Parke during his lifetime contributed to the aid of his widowed mother and sisters. The Government of this country and the military authorities did literally nothing in recognition of the distinguished services of Surgeon-Major Parke in his lifetime, and we most sincerely trust that they will favourably consider the claims of his family now that he is dead and they are deprived of his generous care and assistance.

CHANGES OF MEDICAL OFFICERS.

A communication in a service contemporary calls attention, among other things, to the very frequent changes of medical officers under the present organisation of the army medical service as compared with the old regimental system. This appears to be a subject of frequent complaint, and it is to be regretted if nothing can be done in the way of medical administration to prevent it, for frequent changes of medical officers cannot be popular with either sick officers and soldiers or those who attend them.

The Hants Company Militia Medical Staff Corps will train at Netley from July 2nd to 28th; the number of all ranks is expected to be about 100.

Ten invalids left Gibraltar on the 5th inst. in P. and O. s.s. *Bengal*, and eight invalids on the 9th inst. in s.s. *Cuzco* for conveyance to Netley.

THE MEDICAL DEFENCE UNION.—Dr. Norman Kerr presided at a meeting of the Medical Defence Union summoned at the instance of Dr. Leslie Phillips and held at 20, Hanover-square, on Wednesday, April 18th. The object of the meeting was to consider the present position of the Union, and particularly the recent action of the Council in the case of Bloxham *v.* Collie, and to pass certain resolutions. The meeting agreed to ask the Council to convene a special meeting of the members at an early date to discuss matters of importance relating to the future administration of the Union.

Correspondence.

"Audi alteram partem."

SCARLET FEVER AND EPIDEMIC ROSEOLA.

To the Editors of THE LANCET.

SIRS,—It was with considerable interest and some curiosity that I read Dr. Clement Dukes' valuable paper "On the Features which Distinguish Epidemic Roseola (Rose Rash) from Measles and from Scarlet Fever" in your issue of March 31st. The occasional difficulties of forming a correct diagnosis as between rötheln and measles or scarlet fever are, I suppose, admitted by everyone with experience, probably the greater the experience the more ready the admission. Dr. Clement Dukes, in his paper, sets forth points of difference between these diseases with such admirable clearness that there should in the future be no trouble whatever in determining the nature of a group of cases, which is always comparatively easy, or even in diagnosing any single case on one inspection, a much more difficult feat. Yet I doubt, after all, whether the matter is quite so easy as it would appear even by the application of Dr. Clement Dukes' rules. Last summer I was asked to see a group of (I think) thirteen cases of epidemic disease, characterised by rash, sore-throat &c., with a view to determining whether they were cases of rötheln or scarlet fever. The cases were in all stages: one after twenty-four hours' illness had diffuse red rash and marked sore-throat; another after nearly six weeks of isolation was desquamating freely about the hands and feet; all who had been ill ten days and over were desquamating. The cases were of a very mild type. I had been seeing many such in my own practice in a neighbouring town of 50,000 inhabitants during the whole of the previous year. I had no doubt that this outbreak was connected with the epidemic in the town, or that the cases were ones of scarlet fever, and I gave my opinion accordingly. About a week later these cases were seen by a gentleman who is an acknowledged authority on the differential diagnosis of rötheln and scarlet fever; he unhesitatingly declared them to be rötheln, and straightway gave a certificate to that effect. On turning to Dr. Clement Dukes' paper I find it stated that in rötheln desquamation is over in a week or two, and is *always* in small scales rather than flakes. Now all the cases to which I allude continued to desquamate for six weeks and over, and such scaling as I saw was distinctly of the large or flaky type on the hands and feet. Again, "I don't know any illness which is so infectious in its *earliest* stage," says Dr. Dukes. This point weighed so much with me at the time that it seemed impossible that rötheln should have gained a footing in a community of some 300 young people, and yet at the end of six weeks there should be only thirteen cases in all. And most definite statements of all, "for 'rötheln' practically no sequelæ," "for 'scarlet fever,' among others, otitis, rheumatism, and endocarditis." Now among the thirteen cases to which I have alluded one had otitis media, which was seen by a specialist and diagnosed as a sequela of scarlet fever, and another had pericarditis. In some important particulars, then, it would seem necessary to modify Dr. Clement Dukes' distinctive points of diagnosis, unless, indeed, we are to assume that the authority to whom I have alluded made a mistake in declaring these cases to be ones of rötheln; but that authority was Dr. Clement Dukes himself. To whom, then, shall we appeal?

One word as to the value of enlargement of lymphatic glands as a means of diagnosis. After careful observation I have long been convinced that the cervical glands, especially those lying behind the mastoid, are as constantly enlarged in the early stage of mild scarlet fever as in rötheln; a correspondence in your columns not long since fully confirmed this, as also an annotation on a paper by Dr. Townsend of Boston, U.S., on measles and rötheln in THE LANCET of April 26th, 1890. On being asked, when seeing the cases to which I have above referred, whether the cervical glands were enlarged in mild scarlet fever, I answered, undoubtedly they are. A few days after, having to see a patient in our borough fever hospital, I took the opportunity of examining a number of cases of scarlet fever, all of mild type, sent there by various medical men, and I found the cervical glands more or less enlarged in every case. Last autumn I chanced to attend a number of cases of undoubted rötheln; I failed to find any points of difference between the enlargement of the lymphatics in scarlet fever and in rötheln; but I did observe that children suffering from rötheln early in the case frequently complained of pain in the neck, and drew my attention to the hard pea-like glands; whereas in scarlet fever I do not remember to have heard a child complain, early in a case, of suffering pain or inconvenience from these enlarged lymphatics. Here possibly may be a hint of some diagnostic value.—I am, Sirs, yours truly,

Burton-on-Trent, April 9th, 1894. HENRY E. BRIDGMAN.

THE TREATMENT OF OBLIQUE FRACTURES OF TIBIA AND FIBULA.

To the Editors of THE LANCET.

SIRS,—Mr. Lane's paper, read at the last meeting of the Clinical Society, raises the very important question of the ultimate result of the usual treatment of oblique fractures of the tibia and fibula. The after-histories of such cases are seldom inquired into, but several results that I have lately seen have not been satisfactory. In one case, that of a young woman aged twenty-four, six months after the accident, and after treatment for six weeks in a Croft's splint, there were very marked lameness, complete fixation of the ankle-joint, and much pain in the ankle and foot whenever walking was attempted. Examination showed that though the result was good in so far as there was good union with little or no deformity, nevertheless the position of the limb was faulty on account of the distal fragments having been allowed to unite at a wrong angle, so that the inner surface of the tibia below the fracture looked directly inwards, and as a consequence the foot was inverted, the patient walking mainly on the outer side of the foot. As a result of the displacement of the line of pressure along which the weight of the body is transmitted, a serious condition of traumatic arthritis of the ankle-joint had resulted, causing fixation of that joint; in fact, under chloroform rough and irregular movement of the cartilage surfaces could be detected. In this particular case osteotomy of both bones was necessary to restore the limb to a more useful condition; whereas, a better understanding of the mechanism by which the weight of the body is supported, and the changes in bones and joints consequent on alterations in the lines along which that weight acts, would have saved the patient much pain and trouble. The practice of putting up fractured limbs with the feet inverted is very common, but disastrous in its results, for anyone who tries to stand for a few minutes only with the feet inverted will readily experience for himself a small portion of the pain which patients often suffer permanently as the result of a fractured limb so called cured. If, as Mr. Lane's cases show, the majority of cases of oblique fractures of the tibia and fibula result in insecure limbs, from the difficulty of reducing the bones into their proper position, our methods at present in use are obviously insufficient; and assuredly the risk of immediate restitution and fixation of the bones is infinitely preferable to that of subsequent osteotomy or to a life of chronic disability.

I am, Sirs, yours truly,

Hull, April 16th, 1894. ALFRED PARKIN.

To the Editors of THE LANCET.

SIRS,—Having had the pleasure of hearing Mr. W. Arbuthnot Lane's very excellent paper on "Cases Illustrating a more Effectual and Scientific Treatment of Fracture of the Tibia and Fibula," which he read before the Clinical Society of London on Friday evening last (April 13th), and thinking that I might be able to confirm or shake the opinion arrived at by his statistics, I made inquiries for all the fractured legs in this institution, and among them found fifteen cases of fracture of the tibia and fibula; twelve of this number were treated in the wards of our large medical schools, so the results should be as good as possible; but two of the three cases treated privately were of the number that regained complete use of their limbs There was only one case in which there was no evidence of the seat of the fracture. In two cases the position of fracture was evident, but there was no displacement of the fragments. In the remaining twelve displacement was well marked, and in many excessively so. In six cases, or 40 per cent., the limbs were quite as useful after as before the accident, the time at which utility was restored varied from four to eighteen months. Three of these were cases in which there was no displacement three had displacement, but in only one was it excessive. The ages at which the fractures took place were as follows: four under twenty-six years, one at forty-one and one at fifty-

one. In nine cases, or 60 per cent., the utility of the limb was much depreciated, they were unable to earn the same at their work as before, or had to change their occupation. All complained of pain at the seat of fracture and several of pain in the ankle-joint, which tended to get worse. The average age at which fracture took place in these cases was fifty-five years.

From the above the following deductions may be made: (1) that a very large percentage of the working classes have their earning powers very much depreciated by fractures of the tibia and fibula; (2) that those who regained complete use of their limbs were the young and those with the least displacement; (3) that in the cases occurring after mid-life the displacement was more marked, the pain was a marked feature and not always limited to the place of fracture; and (4) that the treatment as employed in the above cases leaves much to be desired. I am, Sirs, yours faithfully,

J. W. SMITH, M.R.C.S., L.R.C.P. LOND.,
Assistant Medical Officer, Lambeth Infirmary.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Medical Institution.

THE last meeting of the Medical Institution for the session 1893-94 was held on the 12th inst., and was marked soon after its commencement by an incident very gratifying to al present. Mr. Shears, the honorary secretary to the ordinary meetings, read a communication from Mr. Mitchell Banks containing the announcement that the President of the institution, Mr. Chauncy Puzey, had that day been elected an honorary Fellow of the Royal College of Surgeons of England. This wholly unexpected piece of news was received by all present with much pleasure. Mr. Puzey has done a very large amount of good surgical work in the operating theatre, in private practice, and in the medical journals, quietly and unobtrusively, never seeking his own advantage in any way whatever. It is felt by all who know him best that this jealously guarded honour could not have been more worthily bestowed, while the members and associates of the Medical Institution feel that it is a compliment through their president to them.

The late Mr. John Stephen Clarke.

The deceased had been for twenty-four years surgeon to the police; at first as surgeon to the members of the force who were on the sick list, being promoted later on to the higher office of surgeon to those hurt on duty, and to examine recruits and those applying for superannuation. Mr. Clarke was always extremely popular with his patients, having a genial, pleasant manner and being very attentive. It was his misfortune to suffer for a considerable time before his death from a serious internal disease which caused him much suffering, in spite of which he continued to practise till no longer able to do so. He received every care and attention from his friends Dr. G. S. Taylor and Mr. Larkin till death put an end to his sufferings on the 8th inst. His funeral was attended by many professional and other friends, and witnessed by large crowds of the poorer classes, with whom the deceased was very popular. He leaves a widow and a son to mourn their loss.

Presentation to Dr. John Stopford Taylor.

Dr. Taylor, on his retirement from the office of medical officer of health, has been made the recipient of a magnificent vase and the following address from the chiefs of the various corporate departments: "As the heads of the various departments of the municipal service of this city, we beg your acceptance of the vase that accompanies this communication as a token of the esteem and regard entertained for you by the officials of every class during the many years you occupied the important position of medical officer of health. We bid you farewell in the earnest hope that many years of health and happiness lie before you." To this were added ten signatures, the subscribers to the testimonial also comprising many others.

April 16th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Improvements in Newcastle.

AT a special meeting of the Newcastle Town Moor Committee last week the representative of the workmen, medical staff, and other governors of the infirmary waited upon the committee with respect to a site for a new infirmary. The ground selected is that extending from St. James's-street across the Leazes, a portion of the Town Moor, and consists in all of about eight acres. The matter was considered, and it was ultimately decided that the Town Moor Management Committee and the Stewards' Committee should each have the opportunity to further consider the application, after which the chairman should call a special meeting of the joint committees to finally consider the application. A Local Government Board inspector has held an inquiry in the Council Chamber, Newcastle, into the application of the city corporation for a grant of £113 500 for improvements in the public buildings in the municipality. It was proposed to spend the loan as follows: £100,000 for the extension of the Lunatic Asylum, £10,000 for new baths and washhouses &c. In reply to the town clerk, Mr. Dyson said that the asylum buildings it was proposed to erect would last four or five hundred years. Eventually the inspector intimated that he would lay the whole matter before the Local Government Board.

One Hundred Fatal Cases of Cholera at Sea.

The inspector's report of the Tyne port sanitary authority showed that sixty-three emigrants had passed through the port during the month. The captain of the steamer *Samoa* had reported 100 fatal cases of cholera while on her last voyage from the East. The vessel, however, had been thoroughly disinfected prior to her arrival. Three cases of small-pox had also been reported by a second vessel; it had undergone disinfection since its arrival.

Lunatics in Durham County: Another Asylum to be built.

The large increase in the number of lunatics in the county of Durham has been a source of inconvenience during the past few years to the municipal and rural authorities who maintain the county asylum, and latterly many patients have had to be sent to institutions in other parts of the country. Recently it was proposed to enlarge the Sedgefield Asylum, but the proposal has not been received with favour by the Lunacy Commissioners. One of the visiting commissioners for the borough has received notice that the Lunacy Commissioners will not permit the enlargement of the county asylum, and that the Gateshead and South Shields authorities will be compelled to provide a separate asylum for their own patients. Five years' notice has been given by the Commissioners of their intention, and this period will allow of a separate asylum being built. The Gateshead and South Shields authorities will probably agree to build an institution for their lunatics in one or other of the boroughs. This will mean an expense of probably from £80,000 to £100,000.

North-Eastern Counties Ambulance Review.

This review will probably be held about July 21st next, and I am told that the proceeds are likely to be devoted to charitable purposes, and on the occasion of the review a number of the head officials of the St. John Ambulance Association will, it is expected, be present, including Sir Edmund Lechmere, M.P., Colonel Thackeray, and Surgeon-Major Hutton. All ambulance classes in Northumberland and Durham not represented on the committee are requested to send members.

A Record of Northern Longevity.

Mrs. Betty Webster, known as the Wensleydale centenarian and residing at Aysgarth, has just celebrated her 104th birthday. On the occasion of her hundredth birthday four years ago there were considerable rejoicings in the dale. Mrs. Webster has a daughter living aged seventy-four, and numerous great-grand-children.—The death took place on Saturday of Mr. John Thompson, farmer, Lambrigg Park, near Kendal. The deceased would have attained his hundredth anniversary on May 4th. His wife died about a month ago, having attained the age of ninety-seven years.—Mr. James Dods, retired shepherd, who recorded his vote in the recent contest in Berwickshire, and celebrated his hundredth birthday on April 5th, still retains to a marked degree his faculties, mental and physical, so that the aggregate ages of these four persons would a few weeks ago have amounted to about 400 years.

Workmen and Medical Charities.

The workmen of Sir W. G. Armstrong, Mitchell and Co. have contributed over £200 to our city medical charities during the last quarter.

Newcastle-on-Tyne, April 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Support of the Infirmaries.

THE question which is at present most anxiously exercising the minds of those gentlemen who have charge of our public hospitals is the very important one regarding "ways and means." Of the three large infirmaries, the youngest only (the Victoria Infirmary) is self-supporting—that is, is able to meet ordinary expenditure out of ordinary income; the other two infirmaries (the Royal and the Western), much larger institutions, had last year a joint deficit of £17,135. In the case of the Royal Infirmary the deficiency is particularly striking. In 1886 it amounted to £6000, and since then it has steadily risen, till in 1892 it was £11,400, and last year it was £11,000. This naturally led to encroachment on capital, or rather to the appropriation to current, ordinary expenditure of sums which are usually treated as extraordinary income, and thus put to stock account. In spite of its misfortunes the Royal Infirmary last year paid its way, and by appropriating extraordinary income was able actually to add £476 2*s.* 8*d.* to capital account. It is obvious, however, that such income is not a thing on which any public institution can depend; the Royal Infirmary, moreover, was fortunate last year in receiving a legacy of £10,000 from the Bellahouston bequest fund, a windfall which does not come every year. That the want of funds is not due to extravagant expenditure is obvious from the fact that in the Royal Infirmary the cost of each bed is a little over £57, while in the Edinburgh Royal Infirmary it was £63 last year, Liverpool, Manchester, and Leeds showing an average of £61, and some of the London hospitals as much as £80. The real cause of this poverty is the apathy of the general public to the needs of such institutions; it is startling to learn that in Glasgow, with over three-quarters of a million inhabitants, there are less than 4000 individuals or firms who subscribe one guinea or more to the three infirmaries. It has been urged that these infirmaries should be put on the rates—a perfectly impracticable plan when it comes to be carefully considered that to do this for these three institutions alone would add 3½*d.* per £1 to our local rates, while if *all* our medical charities were municipalised and put on the rates a charge would have to be made exceeding our combined present school rate and poor rate with several other rates thrown in. This is conclusive to the minds of most ratepayers. Further, every citizen could then claim the right of treatment, while lack of bed accommodation would be no proper reason or argument for refusing it, and thus the pauperising system would grow to more and more extraordinary dimensions. Again, where would the line be drawn as regards the institutions to be included in the scheme of rate support? There are many "hospitals," "dispensaries," &c., in existence, some of them of very questionable parentage, which might have to be taken over. Then what would become of those members of the profession not fortunate enough to belong to the staff of the huge municipal machine? Their practice and their income would dwindle from year to year, while the work (and perhaps also the salary—not honorarium) of the hospital staff would to a like extent increase. It is scarcely possible to trust these charities to any other support than that of the benevolently disposed public, the springs of whose charity would otherwise soon be dried up. There is plenty of wealth in Glasgow for disposal in philanthropic causes, and our citizens have never been stingy when properly appealed to. Doubtless the recent urgent appeal, particularly on behalf of the Royal Infirmary, will have the expected result in a permanent increase of those contributions which fall under the denomination of ordinary income. The Royal Infirmary was opened in 1794, exactly a hundred years ago; during its century of existence it has treated within its walls 346,119 patients. A record like this will surely not appeal in vain to the well-disposed public. It may be suggested to the directors of the Royal Infirmary that they would interest the public more actively by boldly venturing on even a larger scheme—namely, the pulling down and re-building of the "front house," that portion of the institution opened in 1794—a building which has served its purpose nobly, but is now, to put it very mildly, entirely out of date and unsuited for hospital purposes, as these are now understood. No building, however good at the time of its erection, can be expected to be up to modern scientific requirements, or at all suited for the treatment of the sick, after an entire century of service as a medical and surgical hospital.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Richmond Lunatic Asylum.

ON Saturday last the Judicial Committee of the Privy Council met to consider in what proportions the expenditure incurred in respect of the erection and establishment of an additional asylum at Portrane, county Dublin, for the Richmond District Lunatic Asylum, should be borne by the respective counties, city, and town forming the district. It appears that the Richmond Asylum district comprised five counties—viz., the county of the city of Dublin, the county of Dublin, the county of Wicklow, the county of Louth, and the county of the town of Drogheda. The expense of keeping up the asylum was apportioned among these several counties, and the assessment on each county was fixed by an Order in Council. It had become necessary to provide additional accommodation for patients, and it was therefore necessary to erect an auxiliary asylum, which it was proposed to erect at Portrane. It was estimated that the expense necessary for the erection and equipment of the new building would be £150,000, and the question arose as to the proportion that should be borne by each district. Counsel having been heard, the Lord Chancellor said the committee, after considering the subject, had arrived at the conclusion that the contribution should be apportioned according to the maximum number of patients resident in the asylum at any time during the last ten years. No doubt that was a departure from what had been done originally, but at that time they had nothing to guide them; but now they had these statistics, and they ought to make use of them.

Health of Dublin for March.

As compared with the previous month, there was a decline of one-third in the mortality caused by whooping-cough. There were 25 deaths from influenza, as against 30 in February. The month was very fine, with a mean temperature much higher than is usual at this time of the year. The death-rate in the city was 3·63 per 1000 below the mean rate for March in the previous ten years and was lower than any March during that decade except last year. The zymotic death-rate was 0·68 below the mean rate for the corresponding period in the previous ten years.

Dinner to Surgeon-Major-General W. Collis.

A farewell banquet was given on Saturday evening in the Ancient Concert Rooms to Surgeon-Major-General Collis, principal army medical officer in Ireland, who retires from the service on account of being sixty years of age. The dinner was given by Surgeon-Colonel Maunsell and the officers of the Army Medical Staff in Ireland, several of whom travelled considerable distances in order to be present.

A Medical Man Fined for Contempt of Court.

Mr. Justice Andrews, in the Court of Queen's Bench last week, fined Dr. John Barton the sum of £5 for refusing to attend court on a subpœna. The judge said it was proved to his satisfaction that the subpœna was served on him and that he could have given material evidence.

Cork Lunatic Asylum.

Last week's *Dublin Gazette* contains an Order in Council sanctioning the expenditure of a sum not exceeding £2200 on certain works connected with this asylum.

Presentation to Dr. Redfern.

On Friday, April 13th, a very interesting ceremony took place in the great hall of Queen's College, Belfast, where Dr. Redfern was presented with an illuminated address and portrait, while at the same time a large picture of him, to be placed in the Examination Hall, was unveiled. The President of the College took the chair, and there was a large and representative assembly of professors, Belfast citizens, former pupils, and students. Professor Sinclair read the address, which referred in the most complimentary terms to Dr. Redfern's long connexion—a period of thirty-three years—with the College, to the fact that it was during his professorship that the new medical buildings at the College were erected and thoroughly equipped for the study of anatomy, they having to be enlarged from time to time to provide accommodation for the constantly increasing numbers of students who were attracted to the school by Dr. Redfern's

prestige as an original investigator and brilliant lecturer, and to his great capacity for awakening enthusiasm among his students for work and his kindly interest in their success. Dr. Redfern, who was deeply affected, made a most feeling reply. The President of the College (Dr. Hamilton), Professor Purser on behalf of the Arts Faculty, and Mr. Thomas Sinclair, D.L., in the name of the citizens of Belfast, all referred in terms of the deepest admiration to Dr. Redfern's great work at Queen's College, Belfast. Both portraits of him have been painted by Mr. E. E. Taylor of Belfast. The large one, which is life-size, represents him standing in academic costume, as though lecturing to his students. It bears the inscription: "Peter Redfern, M.D. London, F.R.C.S. England, Professor of Anatomy and Physiology 1860–1893." The smaller portrait (for his own home) shows Dr. Redfern in a sitting attitude. Both pictures are considered admirable portraits.

The Ulster Sanitary Association.

From the report presented at the annual meeting of this society, held on April 13th, it is evident that great progress is being made in its operations in Belfast. Reference was made to the lectures on hygiene delivered at Queen's College by Professor Thompson, and to the courteous reception given to a deputation of the Ulster Sanitary Association which waited on the council of the Ulster Medical Society.

Infectious Disease.

On April 13th a woman was summoned by the Belfast Tramway Company for taking her child, who was suffering from measles, in one of their cars used by the public. The child was being conveyed by the mother to the Fever Hospital. The presiding magistrate thought it was strange that the sanitary authorities took no action in the matter. Owing to the poverty of the woman and her entire ignorance that she was breaking the law, a merely nominal fine was inflicted.

Samuel Connor, L.R.C.S. Edin.

The greatest regret has been felt in Newry at the sudden death in that town of one of its most prominent and influential citizens, Mr. Samuel Connor, at the age of fifty-seven years. The deceased was attending to his work up to 10 o'clock on April 14th and, as his custom was, on that evening went to his bath-room to have a bath. While there he was suddenly seized with an apoplectic attack; about fifteen minutes having elapsed, his daughter became uneasy, and going to the bath-room she was horrified to find the lifeless form of her father lying half over the bath. Dr. Crosslé was sent for at once, but his services were not required. Mr. Connor was born in Stoneyford, county Antrim, in 1837; in 1858 he became an L.R.C.S. Edin. and in 1861 an L.A.H. Dub. He commenced practice in Belfast, but on the retirement of his uncle, Dr. P. Connor, in 1862, he came to Newry and took charge of one of the largest apothecary's establishments in the north of Ireland. He was made a J.P. in 1886. Mr. Connor married a daughter of the late Dr. McIlwaine of Mourne, and he leaves a widow and seven children. He was a man held in the highest respect in Newry and the surrounding districts.

April 17th.

PARIS.

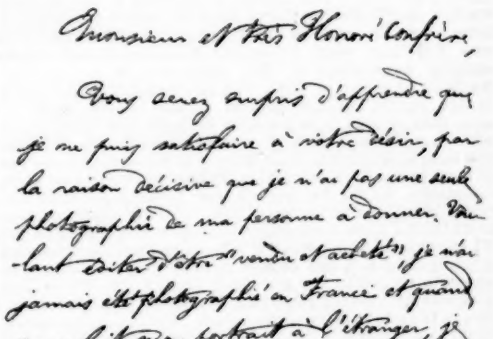
(FROM OUR OWN CORRESPONDENT.)

The Early Diagnosis of Phthisis.

AMONGST the communications made at the recent Roman Congress was one on the above important subject by Dr. Bernheim of Paris. That observer reminds us that in animals inoculated with tuberculous virus the lymphatic glands in the neighbourhood of the *porte d'entrée* of the poison became swollen, and that the spleen became enlarged, the hypertrophied organ surpassing sometimes the volume of the liver. At a more advanced period the entire lymphatic system is involved, and in the parenchyma of the glands Koch's bacillus is found. On the contrary, this micro-organism is rarely discovered in the blood, which medium it appears to find an unfavourable soil for its growth. So it is with human beings; for although inoculation of the blood of a tuberculous man into animals will sometimes provoke the onset of tuberculosis, even diligent search will generally fail to reveal the presence in the blood of the bacillus. Everyone is familiar with the general clinical signs of commencing phthisis—wasting, gastric and nervous troubles, elevation of temperature (Ringer), &c. To the foregoing signs Dr. Bernheim adds the following more specific ones: (1) the examination of the secretions (urine, excess of phosphates and diminution of urea; blood, changes in configuration of the corpuscles; expectoration, presence (rare) of bacilli, urine ditto); (2) the inoculation of the patient's blood into an animal; (3) the examination of the lymphatic system (in many cases of commencing phthisis the glands are enlarged); (4) the constant hypertrophy of the spleen; (5) the improvement induced by the inoculation of these *débutants* in phthisis with immunised serum, the condition of other patients not being ameliorated by serotherapy. Of course, the association of several of the above signs is necessary before the diagnosis can be affirmed; but the early and constant enlargement of the spleen is a sign to which attention has not been called sufficiently, and on that ground I deem it worthy of mention to-day.

The late Dr. Brown-Séquard's Horror of Photography.

I endeavoured unsuccessfully to adorn my necrological notice of the deceased *savant*, Dr. Brown-Séquard, with a reproduction of his photograph; but no photograph of him was procurable in Paris, and the one illustrating the very admirable biography which appeared in THE LANCET last week must have been discovered with much difficulty in England. The following letter, extracted from Dr. Bianchon's work, "Nos Grands Médecins," from Dr. Brown-Séquard, will explain my failure, and will at the same time supply your readers with his autograph.



The Local Treatment of Orchitis with Guaiacol.

MM. Balzer and Lacour state[1] that they have successfully treated several patients affected with orchitis by means of guaiacol applied locally. They at first used the pure substance; but dilution was found necessary owing to its irritant action

[1] Société Médicale des Hôpitaux, April 6th.

on the scrotum. They now find that a 1 in 6 guaiacol-vaseline ointment applied twice daily on the scrotum (from three to five grammes each time), with a three-thickness compress and a T-bandage over all, soon overcomes the pain and reduces the temperature to normal. M. Chauffard states that he has always employed, with great advantage, against blennorrhagic epididymitis sodium salicylate, giving six grammes (one and a half drachms) per diem. I myself gave a trial recently to the U.S. Ph. tincture of pulsatilla (two minims every two hours), but the result was disappointing. What I do find most comforting to patients is the wearing from the first of a Horand-Langlebert suspensory bandage. This apparatus effectually splints the painful gland, and enables the sufferer to get about without pain, even during the acute stage—a no mean advantage in the case of a business man. *Apropos* of guaiacol, Dr. Ferrand of the Hôtel Dieu reports the excellent analgesic effects derived from the local use of equal parts of that substance and glycerine in sciatica and the intercostal pains occurring in phthisical patients. In every instance the cessation of pain was almost immediate, and although it recurs a fresh application soon gives relief.

Lactophenin, a new Analgesic and Hypnotic.

M. Landowski has given a successful trial to this new product in the wards of Professor Proust. This substance differs from phenacetin in that lactic acid takes the place of acetic acid. It is a white powder, tasteless, and soluble in 330 parts of water. The ordinary dose is sixty centigrammes (nine grains), repeated thrice in the twenty-four hours; but each dose may be increased to (a maximum of) fifteen grains. In small doses it has shown itself effectual in calming the pain of neuralgia; in large doses it is hypnotic. It is perfectly tolerated by patients who cannot take antipyrin. In some instances it provokes diaphoresis.

Death of Dr. Cusco.

The death is announced of Dr. Cusco of Paris. His name, although perhaps unfamiliar to English practitioners, will long survive in connexion with the bivalve vaginal speculum in common use in France, and invented by him.

Street Nomenclature and Medical Celebrities.

The naming of streets has been created in this city into a fine art, and the memories of eminent citizens are kept green by this means. The name of the late distinguished histologist, Charles Robin, will henceforth be thus associated with a portion of the Rue Claude-Vellefaux, which has been rechristened Rue Charles-Robin.

April 17th.

Obituary.

MR. HENRY ARNOLD BECKETT.

MR. BECKETT died on Wednesday, April 11th, in the sixty-eighth year of his age. This simple announcement will give to all men who have had intimate relations with THE LANCET in the last forty years a sensation of regret and loss, though they were only too well prepared for it two years ago when Mr. Beckett was attacked with aphasia, which lasted for some months. Since that time his power of work has been much impaired, and only his indomitable love of it and the pleasure of the proprietors in his services account for the fact that he was more or less in attendance at THE LANCET offices down to the occurrence of his last fatal illness, which was of an apoplectic character, with hemiplegia of the left side. Mr. Beckett's connexion with this journal dates back to the time when its founder was alive, and began in the printing office. The qualities of memory, of intelligence, of single-mindedness and faithfulness, the fine sense of literature which he developed so strikingly in later years, made him a man to be retained and promoted from one position to another. In the post of reader he showed a perfection which could not be exceeded, and which caused him subsequently to be placed during many years in a position of responsibility in the sub-editorial department. To such a man, as may be well understood, the duty of readership to THE LANCET, extending over a long period, was in itself a special education, and brought to the subject of it a knowledge of the profession, of its interests and of its members, which made him a kind of encyclopædia for reference. His help and his knowledge were always at the service of those who needed them—perhaps in the emergencies of going to press or at any time of professional excitement and pressure. It was instructive to see the quietness with which in his orderly way he went about his duties from week to week and preserved his serenity to the last hour of a Thursday night when the journal in which he took so loyal an interest was safely committed to the printers. It is not for us to enlarge on the other aspects of Mr. Beckett's character and the other uses of his time when Saturday and Sunday gave him a slight respite from his journalistic duties, the more so as his innate modesty and shyness led him quickly into the privacy of his thoughts and his own home; but we shall not be wrong in supposing that in this interval he drank of all that was best in the current literature of the day, and that all subjects of human thought affecting the happiness and destiny of men engaged his attention and his interest. The spirit which animated and guided his life under all circumstances is manifest in the words of his favourite verse:—

> "Truth, crushed to earth, shall rise again.
> The eternal years of God are hers;
> Whilst error, wounded, writhes in pain,
> And dies amidst her worshippers."

We must cut short our notice were it only from respect to him who was so averse to notice and publicity. We have rarely known one who did his duty with so much gentleness and so much efficiency and with whom it was so pleasant and beneficial to coöperate. We are sure that in these few words we shall have the concurrence of a large number of the leaders and writers of the profession, and that the memory of the character they represent will be the best solace to the widow and children of our deceased friend, who was buried in Highgate Cemetery on Monday last.

SURGEON-CAPTAIN FRANCIS LINDESAY CARTE, L.R.C.P., L.R.C.S. IREL.

WE record with extreme regret the death of Surgeon-Captain Lindesay Carte, which took place at Allahabad on April 2nd. Surgeon-Captain Carte was only thirty-one years of age, and by his early death another name has been added to the long list of young army surgeons who have fallen victims during the past few years to the climate of India. The deceased was the third son of William Carte, J.P., F.R.C.S. Irel., an officer with forty years' service, who holds the appointment of medical officer to the Royal Hospital, Kilmainham, and headquarters' staff in Ireland, and his brother is Surgeon-Major W. A. Carte of the Grenadier Guards. He was born in November, 1862, and after passing the usual competitive examination he obtained his commission when only twenty-two years of age. In 1886–87 he served in Assouan. Surgeon-Captain Carte was wrecked in the *Tasmania* near Ajaccio when returning from Egypt. The captain and twenty-four officers and men of the ship were lost, and as a result of the severe exposure the subject of our obituary notice suffered from a prolonged attack of rheumatic fever. Early in 1889 Surgeon-Captain Carte embarked for India, and subsequently served with much distinction in Burmah, being rewarded with a medal and clasp. He was afterwards stationed in the Rawal Pindi command during the cholera outbreak which caused so many deaths amongst medical officers, who threw themselves with great devotion into their labours. Having been prostrated himself by fever he was sent home on six months' leave, and at the expiration of this period—in October last—he returned to India and contracted the malady from which he died. His friends felt that he was quite unfit to return to duty; but the rules of the Service display a disregard for the conditions which are necessary for the preservation of the health of medical officers, and he returned to India to finish his term of six years. Until invalided home Surgeon-Captain Carte was unable to enjoy any rest or leave while in India, for, although he was granted a short furlough in 1892, he was recalled after a few days, and in his then condition of health he speedily completely broke down. All who knew him respected his marked talents and his genial disposition; he was well known and universally beloved, and the news of his sad and untimely death will be sincerely deplored by his many friends.

HENRY WELCH, M.D., B.Sc. EDIN.

THE death of Dr. Welch, at the early age of thirty-seven years, has been a source of deep regret to all who knew him.

He was educated at Lancaster Grammar School, and afterwards proceeded to Edinburgh, where he graduated B Sc. in 1882, and M.D. with honours in 1887. After serving as house physician at the Liverpool Royal Infirmary and house surgeon at the Royal Southern Hospital in the same city, he was appointed medical officer of health for Blackpool in 1883. Here he worked assiduously, and it was upon his initiative that the corporation built the sanatorium for infectious cases and the refuse destructor, and resolved upon the erection of the public abattoir, not yet completed. He contributed many papers on sanitary subjects to the North-Western Association of Medical Officers of Health, and in 1890 was elected President of the Association. In 1891 he suffered so much from pulmonary phthisis that, on advice, he resigned his appointment, and retired to a little property at Halton which he had inherited. He spent two winters at Davos am Platz, and also took a voyage to South Africa, no doubt benefiting thereby. Last winter, however, he was too ill to venture abroad. He gradually declined in health, and the end came peacefully at Halton on Monday, the 2nd. Dr. Welch was the last of a well-known Lancashire family, many of whom were also victims of phthisis.

WILLIAM OLIPHANT DOW, M.B., C.M. EDIN.

DR. WILLIAM OLIPHANT DOW, whose early death we regret to announce, was the only son of Dr. William Barrie Dow of Dunfermline, N.B., one of the leading practitioners in Fifeshire. He was born in 1860, and was educated at Fettes College, Edinburgh. After a successful career as a student at the university of that city, during which he distinguished himself in mathematics, natural philosophy, chemistry, and clinical medicine, he graduated M.B. and C.M. in 1885. After graduating he studied at the Rotunda Hospital in Dublin and at the medical schools of Heidelberg and Vienna. Returning to Scotland he joined his father in practice, but failure of health compelled him to reside for several winters in Egypt, where, although an invalid, he industriously seized such opportunities of cultivating his profession as presented themselves. Those who knew him will not soon forget the quiet dignity and uncomplaining courage with which he returned to his duties in Scotland whenever the state of his health and the climate of his native country allowed him to do so. Although, thus, circumstances with which he bravely but vainly contended have caused him to be numbered with those whose names and fame are "writ in water," that writing will long be legible to his numerous friends and to his patients, by whom he was much respected, and who recognised his sterling qualities as a man and a physician.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board under the "four years" regulations in the subjects indicated, viz.:—

Part I., Chemistry and Chemical Physics:—
Ambrose, Edward Quald, London Hospital.
Broadbent, Sydney Shakspere, Firth College, Sheffield.
Cheese, John William, University College, London.
Clapham, Herbert, Firth College, Sheffield.
Cousins, Edward R. M. C. Ratcliffe, University College, London.
Croft, Frank William, Westminster Hospital.
Davies, Edward Cecil, Guy's Hospital.
Dunn, John Cecil Stoyte, St. Bartholomew's Hospital.
Elvins, Ralph Sedgley, Mason's College, Birmingham.
Farhi, Hillel Jacob, Syrian Protestant College, Beyrout.
Hamilton, John James Cecil, King's College, London.
Hoare, Alfred Richard, St. Thomas's Hospital.
Knight, Frederick C. R. M., Guy's Hospital.
Mahany, Edward Charles, St. Thomas's Hospital.
Millar, Alexander Fleming, St. Thomas's Hospital.
Nasmyth, Donald K. Lutterell, Charing-cross Hospital.
Viney, Henry James, Middlesex Hospital.
Wills, Edward Chaning, University College, Bristol.
Wood, James, private study.

Part II., Materia Medica and Pharmacy:—
Austin, Neville Henry, St. Mary's Hospital.
Bayliss, Henry, Mason's College, Birmingham.
Bennetts, Frederick, St. Mary's Hospital.
Bickford, Nicholas Seymour, Charing-cross Hospital.
Brittain, Percy Morgan, St. Bartholomew's Hospital.
Brodribb, Ernest, St. Mary's Hospital.
Bullmore, Cecil Charles, University College, London.
Bunbury, Edwin Garrett, Cambridge University, and University College, Bristol.
Callender, Leonard Hay, St. Mary's Hospital.
Carson, Herbert William, St. Bartholomew's Hospital.
Collier, Henry Nunan, Guy's Hospital.
Collinson, Francis Charles, Yorkshire College, Leeds.
Cooper, Wilbye, Yorkshire College, Leeds.
Crompton, Sydney, Mason's College, Birmingham.
Deck, Edward James, St. Bartholomew's Hospital.
Elliott, John Lewis, Yorkshire College, Leeds.
Ellis, Henry Reginald, St. Bartholomew's Hospital.
Farr, Arthur, Charing-cross Hospital.
Fernie, John Firth, St. Bartholomew's Hospital.
Francis, John Edmund, University College, London.
Freer, William Leacroft, Mason's College, Birmingham.
Grant, Alexander Smeaton, London Hospital.
Grimes, Leonard Avery, St. George's Hospital.
Hall, Henry Acton, St. Mary's Hospital.
Hodgkins, Albert Edward, St. Bartholomew's Hospital.
Holmes, Bernard Willoughby, St. Bartholomew's Hospital.
Jones, David Thomas, Middlesex Hospital.
Jones, Henry Gladstone, St. Mary's Hospital.
Jones, John Howard, Middlesex Hospital.
Keats, Francis John, Middlesex Hospital.
King, Thomas Gill, London Hospital.
Langley, John Edward, Middlesex Hospital.
Lanyon, Edgar Temple, King's College and London Hospital.
Latchmore, Arthur Thomas, Yorkshire College, Leeds.
Leclézio, Gustave Ernest, St. Bartholomew's Hospital.
Littlehales, Arthur Gascoyne, Westminster Hospital.
Lloyd, Edmund Eyre, St. Mary's Hospital.
Macdonald, John Norman, St. Mary's Hospital.
Mahany, Edward Charles, St. Thomas's Hospital.
May, Sydney William, Owens College, Manchester.
Meredith, George Lowe, London Hospital.
Miller, George Velentine, University College, London.
O'Sullivan, Daniel, London Hospital.
Potter, Bernard Elwell, Charing-cross Hospital.
Renshaw, Charles A. K., Owens College, Manchester, and Cambridge University.
Rundle, Claude, St. Mary's Hospital.
Stallard, Hamilton G. F., University College, London.
Stephens, Stanley, St. Mary's Hospital.
Taylor, Ronald Archibald, London Hospital.
Tenison, Adolf, St. Mary's Hospital.
Turner, Arthur Scott, Guy's Hospital.
Wall, James Bligh, St. Mary's Hospital.
Watson, Charles E. S., Guy's Hospital.
Weber, Edward Albert, St. Bartholomew's Hospital.
Winter, William C. Pollard, Guy's Hospital.
Wright, Alfred Bosworth, London Hospital.
York-Davies, John Wynne, Charing-cross Hospital.

Part III., Elementary Anatomy and Elementary Physiology:—
Ashby, Edgar, Guy's Hospital.
Atherton, Alfred, St. Thomas's Hospital.
Atkinson, George Louis, King's College, London.
Barlow, Herbert Cecil, Westminster Hospital.
Beale, Harry Hibberd, St. Mary's Hospital.
Bennett, James, Owens College, Manchester.
Birch, John, Owens College, Manchester.
Clark, William Edward Jelf, Guy's Hospital.
Cogswell, Philip Dare, St. Mary's Hospital.
Colwell, Hector Alfred, St. Bartholomew's Hospital.
Crapper, Harold Sugden, Guy's Hospital.
Davies, Howell, St. Bartholomew's Hospital.
Distin, Ernest John, King's College, London.
Farrington, Alexander, St. Bartholomew's Hospital.
Fox, Campbell Tilbury, University College, London.
Franks, Charles, Westminster Hospital.
Green, Walter, Charing Cross Hospital.
Hamilton, John James Cecil, King's College, London.
Handson, Lionel Edwin Charles, Guy's Hospital.
Hewitt, Harry Edward, St. Thomas's Hospital.
Hulme, Thomas Haylock, London Hospital.
Iliffe, Caris William, Owens College, Manchester.
Johns, Frederick Arthur, London Hospital.
Jones, John Llewellyn, University College, London.
Lawson, Frank Howard, Middlesex Hospital.
Longley, John Augustus Noel, Mason's College, Birmingham.
Lucas, George Robb, Edinburgh University and Mr. Cooke's School of Anatomy and Physiology.
Lucas, George Humphry, Middlesex Hospital.
Musgrove, Edward Hugh, University College, Cardiff.
Marles-Thomas, Theodore, University College, London.
May, Walter John, Charing Cross Hospital.
Millar, Alexander Fleming, St. Thomas's Hospital.
Morgan, Thomas, Guy's Hospital.
Morgan, William Ellis, Charing Cross Hospital.
Morland, Egbert Coleby, St. Bartholomew's Hospital.
Oliver, Norman Henry, Guy's Hospital.
Payne, Joseph Lewin, Guy's Hospital.
Penrose, Arthur Wellesley, Guy's Hospital.
Phillips, Owen Tredwell Atherley, University College, Cardiff.
Plummer, Edgar Curnow, King's College, London.
Pywell, Percy Dodd, St. Thomas's Hospital.
Ralph, Arthur Ernest, Middlesex Hospital.
Rollings, John William, University College, London.
Saunders, Edward Mills, King's College, London.
Seller, Alfred Edward, London Hospital.
Stanley, Arthur John, Mason's College, Birmingham.
Stevens, Bertram Crossfield, St. Thomas's Hospital.
Thwaites, Gilbert Rahn, St. Thomas's Hospital.
Viney, Henry James, Middlesex Hospital.
Walker, Arthur West, Mason's College, Birmingham.
Williams, John Henry, London Hospital.
Worley, William Ernest Arnsden, St. Bartholomew's Hospital.
Young, Bertram Michell, St. Thomas's Hospital.

Elementary Anatomy only :—

Cogan, Le Danby Buxton, Guy's Hospital.
Dykes, Campbell, University College, London.
Sanders, Charles Henry, St. George's Hospital.

Elementary Physiology only :—

Battiscombe, Eric George, London Hospital.
Bunbury, Edwin Garrett, University College, Bristol.
Butterworth, John, Owens College, Manchester.
Crosfield, Arthur Mellor, University College, Liverpool.
Howard, William Henry, Owens College, Manchester.
Kenny, James Patrick, Catholic University, Dublin.
McKay, Robert, Middlesex Hospital.
Oldham, Sam Drayton, Owens College, Manchester.
Sykes, Reginald, Yorkshire College, Leeds.
Thomas, Elijah Richard Lockwood, London Hospital.
Wilson, Graham Lionel John, St. George's Hospital.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated :—

Wednesday, the 11th inst. :—

Anatomy and Physiology only.—Robert William Mayston, student of Guy's Hospital; William Robert Gibson, Frank Whincup, and Francis Victor Owen Bell, of St. Bartholomew's Hospital; Percy Cooper Colls, Ralph Paul Williams, and Stephen Frederick Lynch, of King's College, London; Sidney Herbert Berry, Sidney James Wareham, and Edwin Henry Mountford, of Charing-cross Hospital; Joseph Sandert Barnes and Bertram Shera Wills, of St. Thomas's Hospital; Arthur Frederick Bykert and Frederick William Mulligan, of Trinity College and Toronto University, Canada.
Anatomy only.—Gilbert Smith and William Jones Richards, of St. Bartholomew's Hospital; and Daniel Lloyd Smith, of Guy's Hospital.
Physiology only.—Hadley Charles Jackson, of University College, London; and William John Humby, of Middlesex Hospital.
Sixteen gentlemen were referred in both subjects, two in Anatomy only, and three in Physiology only.

Thursday, the 12th inst. :—

Anatomy and Physiology.—Herbert Hilton Cheesman, of Westminster Hospital, and Arthur John Cleveland, of Guy's Hospital.
Anatomy only.—Arthur Rowland Greenwood, of Middlesex Hospital; Frederick Gerald Verity, of Charing-cross Hospital; and Geoffrey Edward Gardiner, of St. Bartholomew's Hospital.
Physiology only.—Frank Burnard Mudd, of Middlesex Hospital; Arthur Horace Gadsden, of St. Mary's Hospital; Steward Septimus Simmons, of St. George's Hospital; and Horace Kemp Palmer, of St. Bartholomew's Hospital.
Six gentlemen were referred in both subjects, two in Anatomy only, and seven in Physiology only.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentleman, having previously passed the necessary examinations and having now attained the legal age of twenty-five years, was at the quarterly meeting of the Council on the 13th inst. admitted a Fellow of the College :—

Blackwell, Arthur Seal, M.B., B.S. Lond., L.R.C.P. Lond., of St. Bartholomew's Hospital; diploma of Member dated Feb. 11th, 1892.

The following gentlemen, having passed the necessary examinations and having conformed to the by-laws and regulations, were at the same meeting admitted Members of the College :—

Fairbank, Robert Stephen, L.S.A. Lond., King's College Hospital.
Reinhardt, Arthur Hope, L.S.A. Lond., London Hospital, and Yorkshire College, and General Infirmary, Leeds.
Tatham, Arthur Leopold, Exams. for L.R.C.P. Lond., St. George's Hospital.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—Under the new regulations the following candidates have satisfied the examiners :—

ELEMENTARY ANATOMY AND BIOLOGY, CHEMISTRY, AND PHYSICS.

HONOURS—SECOND CLASS.

Adams, Thomas George Drabble, College of Medicine, Newcastle-upon-Tyne.
McCall-Smith, Norman, College of Medicine, Newcastle-upon-Tyne.

PASS LIST.

Bell, John Thomson, College of Medicine, Newcastle-upon-Tyne.
Gun Munro, Charles Evelyn, College of Medicine, Newcastle-upon-Tyne.
Phillips, Theodore John, College of Medicine, Newcastle-upon-Tyne.
Vogwell, Charles Augustus, College of Medicine, Newcastle-upon-Tyne.

CHEMISTRY AND PHYSICS.

Davies, Frank Aaron, Mason College, Birmingham.
Ferens, Harold, College of Medicine, Newcastle-upon-Tyne.
Hodges, Walter, St. Thomas's Hospital.
Johnson, Samuel Percy, Mason College, Birmingham.
Morland, Robert Atkinson, College of Medicine, Newcastle-upon-Tyne.
Owthwaite, William, College of Medicine, Newcastle-upon-Tyne.
Shea, Henry Francis, St. Thomas's Hospital.
Smith, Charles Seaver, Mason College, Birmingham.
Stevens, Alfred Edward, St. Thomas's Hospital.

ELEMENTARY ANATOMY AND BIOLOGY.

Johnson, Charles, College of Medicine, Newcastle-upon-Tyne.

THE Worshipful Company of Clothworkers has sent a donation of £60 to the Royal Hospital for Diseases of the Chest, City-road, E.C.

MEDICAL MAGISTRATE.—Mr. Richard St. Norris, M.D. Brux., L.R.C.S. Edin., of Aston, Birmingham, has been placed on the Commission of the Peace for the county of Warwickshire.

FOOTBALL CASUALTIES.—On Saturday last, during the progress of a match at Southend between the Southend and Grays teams, the Southend back collided with a Grays forward, each sustaining a fractured humerus.—On the same day at Falkirk, in a match between the Blackburn Rovers and East Stirlingshire teams, a player fractured his leg.

WEST KENT MEDICAL CHIRURGICAL SOCIETY.—At the meeting of this society held on April 6th, Mr. MacGavin, President, in the chair, Dr. Harry Campbell opened a discussion on Headache.—Dr. Pitt read a paper on the Pathology of Headache, and the Headache of Dyspepsia was the subject of a paper read by Dr. Herschell.—Dr. Ezard read a paper on the Headache of Nasal Disease.—Dr. Ernest Clarke took up the subject of the Headache of Astigmatism.

QUEEN MARGARET COLLEGE, UNIVERSITY OF GLASGOW (WOMEN'S DEPARTMENT).—In addition to various other handsome gifts to the University of Glasgow, the Bellahouston trustees have intimated the following—viz., a capital grant of £5000 towards the erection and equipment of buildings at Queen Margaret College for the medical and scientific instruction of the students attending there, provided the University Court is willing to undertake the pecuniary responsibility of erecting the buildings in question.

AT the ordinary general meeting of the Sanitary Institute, which was held on April 5th at the Parkes Museum, Margaret-street, London, under the presidency of Sir George Humphry, the chairman of the council, Sir Thomas Crawford spoke with satisfaction of the good results that had accrued from the work of the institute. At the end of 1893 the members and associates of the institute numbered 1319, and the income for the year amounted to £3415. The president of the institute, the Duke of Westminster, K.G., was re-elected.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis will shortly issue in his Practical Series a volume on "Diseases of the Nose and Throat," by Dr. F. De Havilland Hall. A new edition of Dr. Norman Kerr's treatise "On Inebriety" is also in the press.—Messrs. James Elliott and Co. will issue to subscribers on April 25th "The Hermetic and Alchemical Writings of Paracelsus," in two volumes. This important work will contain, entire and unabridged, the large body of literature attributed to Paracelsus, which treats directly of the transcendental doctrines and physics of the "Magnum Opus"; the whole Paracelsian literature of the Great Elixir and the Universal Medicine; and a collection of all the alchemical references scattered through the chirurgical writings of Paracelsus. The text which has been adopted for translation is the Geneva folio of 1658, in Latin. The works ascribed to Paracelsus which are not to be found in this edition have been rendered from other equally representative sources.

THE DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The first meeting of this society was held at 15, Cavendish-square, on April 12th, when the following were elected as officers and council for the ensuing year :—President: Philip H. Pye-Smith, M.D., F.R.S. Vice-Presidents: McCall Anderson, M.D. Glasg., J. Hughlings Jackson, M.D., F.R.S., Robert Liveing, M.D., Samuel Wilks, M.D., F.R.S. Council: Wm. Anderson, F.R.C.S., Robert L. Bowles, M.D., H. Radcliffe Crocker, M.D., A. J. Harrison, M.B. Lond., Clifton, Jonathan Hutchinson, F.R.S., W. Allan Jamieson, M.D. Edin., Stephen Mackenzie, M.D., Buxton Shillitoe, F.R.C.S., Walter G. Smith, M.D. Dub., Waren Tay, F.R.C.S., Frederick Taylor, M.D., J. F. Payne, M.D. Treasurer: Alfred Cooper, F.R.C.S. Hon. Secretaries: J. Herbert Stowers, M.D., 41, Finsbury-square, E.C.; A. Marmaduke Sheild, F.R.C.S., 20, Stratford-place, W. It is proposed to inaugurate the new society by a congress to be held on May 31st at 20, Hanover-square, when some important discussions and communications are being arranged for, the titles of which will be subsequently announced.

ACCORDING to the summaries of statistics relating to mines and miners collected by Her Majesty's inspectors of mines, 1060 deaths from accidents in coal mines and 65 in metalliferous mines occurred during the year 1893. In both cases the number of deaths are above the average annual mortality.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—The quarterly court of directors of the society was held on Wednesday, April 11th, in their new offices, 11, Chandos-street, Cavendish-square, Mr. Aikin, Vice-president, in the chair. Four new members were elected and the deaths of five were reported. A fresh application from a widow was considered and a grant at the rate of £30 per annum was made. It was resolved that a sum of £1236 be divided among fifty-six widows, nine orphans, and four orphans on the Copeland Fund at the July quarterly court. The following members were nominated for election as officers of the society at the annual general meeting—viz., Mr. Merriman, as a vice-president; Dr. Church, as a treasurer, to fill the vacancies caused by the death last year of Mr. Fuller; Dr. Braxton Hicks, Dr. Russell Reynolds, Dr. Morison, Mr. Langton, Mr. Rouse, Dr. Wharton Hood, and Dr. Oswald, as directors, in place of Dr. Church and the six senior directors who retire. The annual general meeting was fixed to be held on Friday, May 25th, at 5.30.

THE GERMAN HOSPITAL.—The annual dinner of this institution was held on Thursday, April 12th, in the Whitehall Rooms of the Hôtel Métropole, Prince Christian in the chair. In proposing "The Health of the Queen and the Members of the Royal Family," the chairman expressed the gratitude of the governors for the support accorded by Royalty to the institution. He next proposed the toast of "The Foreign Sovereigns and Princes, Protectors, and Patrons of the Institution," and in doing so referred to the interest which the German Emperor and the Emperor of Austria took in the hospital, and said that the institution was indebted to the former for an annual donation of £200 and to the latter for one of £50. He referred to the fact that next year the institution would reach its jubilee, half a century of great and ever-increasing usefulness not only to Germans, but to Englishmen and sufferers of every race who were received in the wards in cases of emergency, and to whom the out-patient wards were always open. The hospital had 125 beds, a convalescent home of 70 beds, while its in-patients last year numbered 1456, and its out-patients 25,747. The hospital depended entirely on voluntary contributions, and but for last year's legacies there would have been a deficiency of £2600.

ROYAL METEOROLOGICAL SOCIETY.—At the meeting of this society, held on Wednesday evening, the 18th inst., at the Institution of Civil Engineers, Great George-street, Westminster, Mr. Richard Inwards, F.R.A.S., the President, delivered an address on some phenomena of the upper air. A short time ago a balloon, without an aeronaut, but having a set of self-recording instruments attached, was sent up in France, and from the records obtained it is shown that a height of about ten miles was attained, and that the temperature fell to *minus* 104° F. Every cloud may be regarded as the top of an invisible warm column or current thrusting its way into a colder body of air. Mr. Inwards said that whatever system of naming and classifying clouds be adopted, it should depend on the heights of the various clouds in the air, and he gave a few rough rules by which the comparative altitudes of the clouds may be judged when there is no time or opportunity to make exact measurements. Among the indications by which a cloud's height in the air may be gathered are its form and outline, its shade or shadow, its apparent size and movement, its perspective effect, and the length of time it remains directly illuminated after sunset. By the last method some clouds have been estimated to have been at least ten miles above the surface of the earth. The cloud velocities at high altitudes have been carefully noted at the Blue Hill Observatory, Mass., U.S., and show practically that at a height of about five miles the movement is three times as fast in summer and six times in winter as compared with the currents on the earth's surface. After showing a number of lantern slides illustrating the various types and forms of clouds, the aurora borealis, rainbows, &c., Mr. Inwards concluded his address by urging the desirability of establishing a good cloud observatory somewhere in the British Isles.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Sanitation Work in Egypt.

IN his report for 1893 on the finances, administration, and condition of Egypt and the progress of the work of reform in that country, Lord Cromer devotes some space to the operations of the Sanitary Department. He explains that two pavilions for twenty-two beds and the administrative block of the new infectious diseases hospital have been completed, and holds out the prospect of the entire hospital—so far as it is proposed to build at present—being finished early in the current year. A public disinfecting station with two new machines has, he says, been provided, and many improvements have been carried out at the lunatic asylum, where they were greatly needed. He also says it is hoped to build new hospitals at Fayoum, Damanhoor, and Beni-Suef in the course of the present year. Much good has already been done in the way of improving the sanitary condition of the mosques. Thirty-one mosques in the towns of Tantah, Damanhoor, Mansourah, Zagazig, and Port Said have been put in satisfactory condition, and the work is being extended to other towns. Provision has been made for creating a veterinary school in connexion with the School of Medicine. Lord Cromer adds to this information the hope that students will come forward, because the supply of Egyptian veterinary surgeons is almost exhausted. Another advance to be expected is the opening of a Vaccine Institute. As to the general sanitation of the country, Rogers Pasha writes to Lord Cromer that he can report little or no progress. The drainage of Cairo has not yet been commenced, and the scheme for Alexandria is still in the stage of preparation, while Tantah has not yet got its water-supply.

HOUSE OF COMMONS.

THURSDAY, APRIL 12TH.

Lunacy in Ireland.

MR. Morley informed Mr. William Kenny that his attention had been called to the want of proper accommodation for inmates at the Richmond Lunatic Asylum, Dublin, the public asylum for the city and county of Dublin and the counties of Wicklow and Louth. He was also aware that the inmates numbered about 1500, while there was proper accommodation for only 1000; but steps had been taken to acquire a site for an auxiliary asylum at Malahide, in the county of Dublin, and for the erection of the necessary buildings.

The Fulta Shooting Case.

Mr. Caine asked the Secretary of State for India if his attention had been called to a recent trial in Bengal, known as the Fulta shooting case, in which a charge of murder against an army surgeon was dismissed by the District Sessions Judge on the ground that the witnesses had committed perjury; and, if so, would he order that these witnesses shall be prosecuted.—Mr. Henry Fowler replied that the case was not dismissed by the district sessions judge, but by the Chief Justice of the High Court of Calcutta on the application of the prosecuting council. The prosecution or otherwise of the witnesses for perjury was a question which he thought might safely be left in the hands of the authorities.

FRIDAY, APRIL 13TH.

Veterinary College for Ireland.

Mr. J. Morley informed Mr. W. Johnston that it was proposed to ask Parliament to allocate the sum of £15,000 as a grant in aid towards acquiring college buildings and fittings for the establishment of a Veterinary College for Ireland.

TUESDAY, APRIL 17TH.

Railway Plate-layers.

Mr. Burns asked the President of the Board of Trade whether his attention had been directed to the circumstances connected with the death of Robert Royal, plate-layer, on the London and South-Western Railway at Vauxhall, and whether he was prepared to compel all railway companies to carry out the recommendation of the coroner's jury and appoint look-out men whilst gangs of plate-layers were at work.—Mr. Mundella replied that the regulations as regards inspectors, gangers, plate-layers, and others employed on the permanent way were carefully considered by the railway companies in 1889. There was always a foreman or leading ganger over each gang employed on the permanent way, who was provided with a copy of the time-table, and plate-layers are ordered to protect their operations by sending out flag-men. These regulations were within the discretion of the railway companies, and he had no power to modify them.

Mr. C. Roundell brought in a Bill to abolish the representation in Parliament of the Universities of the United Kingdom.

WEDNESDAY, APRIL 18TH.

Experiments on Living Animals.

On the motion of Mr. G. Russell a return was agreed to showing the number of experiments performed on living animals during the year 1893 under licences granted under the Act 39 and 40 Vict., c. 77, distinguishing painless from painful experiments.

HOUSE OF LORDS.

MONDAY, APRIL 16TH.

Marking of Foreign Meat.

On the motion of Lord Ribblesdale, the Select Committee which sat last Session to inquire into the necessity and practicability of legislation requiring imported foreign and colonial meat and other agricultural produce to be marked with its place of origin was reappointed.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADAM, J. W., M.B., C.M. Glasg., has been appointed Surgeon to the Garnkirk Fireclay Company's Works, near Glasgow.

BERRY, FRANCES MAY DICKINSON, M.D. Lond., has been appointed Assistant Anæsthetist to the New Hospital for Women.

BROWN, R. M., M.B., C.M. Edin., has been appointed Medical Officer for Denholm, near Hawick.

BRUCE, R. H. G., M.B., M.Ch. Aberd., has been appointed Hospital Surgeon for the district of Coffee Fountein, South Africa.

BUCHANAN, GEORGE SEATON, M.D., B.S., B.Sc. Lond., has bee appointed Resident Medical Officer to the Royal Hospital for Diseases of the Chest, City-road.

CLEAVER, W. F., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Phillack Urban Sanitary district.

COHEN, G. A., M.B., C.M. Edin., has been appointed Resident Medical Officer to the Hospital for Heart Diseases and Paralysis, Soho-square, London.

COVEY, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer at the Infirmary of the parish of St. Pancras.

DENT, ERNEST A., M.B., C.M., has been appointed Assistant House Surgeon to the Devonshire Hospital and Buxton Bath Charity.

EDINGTON, GEO. HENRY, M.B. Glasg., has been appointed Resident Medical Officer to the Royal Hospital for Sick Children, Glasgow, vice Walter K. Hunter, resigned.

FAWSSETT, F., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Chailey Union.

GREENWOOD, G. S., L.R.C.P. Lond., M.R.C.S., D.P.H., has been reappointed Medical Officer of Health for Ossett.

HARMAN, ALBERT B., M.R.C.S., L.R.C.P., L.S.A., has been appointed House Surgeon to the Royal Hants County Hospital, Winchester.

HERBERT, A. W. C., L.S.A., has been appointed Medical Officer for the Borough of Southwold, vice Vertue.

HEWITSON, C. C., M.R.C.S., has been reappointed Medical Officer of Health for the St. John's Sanitary District of the Weardale Union.

HOPE, E. W., M.D., C.M. Edin., D.Sc. (Public Health), L.R.C.P. Lond., has been appointed Medical Officer of Health for the Liverpool Urban Sanitary District of the parish of Liverpool, vice Taylor, resigned.

LAWSON, T. C., M.R.C.S., has been appointed Medical Officer for the Ombersley Sanitary District of the Droitwich Union.

PEARSE, W. W., M.B., C.M. Aberd., has been appointed, *pro. tem.*, Medical Officer to the Bideford Board of Guardians.

ROBERTS, FRANCIS H., L.R.C.P. Lond., M.R.C.S. Eng., has been reappointed Medical Officer of Health for the Llandrindod Wells Urban Sanitary District.

SHANN, H. C., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer to the York Workhouse.

SMITH, W. R., M.D. Aberd., C.M., D.Sc. (Public Health), has been appointed Public Analyst of Plumstead, Kent.

TREVELYAN, EDMOND FAURIEL, M.D., M.R.C.S., has been appointed an Honorary Assistant Physician to the General Infirmary, Leeds.

UBSDELL, H., M.R.C.S., has been appointed Medical Officer of Health for the Buckfastleigh Urban Sanitary District of the Totnes Union.

WACHTER, CHARLES, M.D., has been appointed Resident Assistant Surgeon (Ambulance Duty) to the Northern Hospital, Liverpool.

WATERS, A. J. G., L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the North Witchford Union.

WILKIN, R. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the fifth Sanitary District of the Risbridge Union, vice Bateman, resigned.

WILLOUGHBY, W. G., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H. Camb., has been reappointed Medical Officer of Health for Plympton St. Mary R.S.A.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITAL, Parkhill.—Resident Medical Officer. Salary £100 per annum, increasing £10 per annum to £120 as a maximum (subject to certain conditions), together with board, washing, and lodging at the hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

DEWSBURY AND DISTRICT GENERAL INFIRMARY, Dewsbury.—House Surgeon. Salary (commencing) £80 per annum, with board and residence.

DUNSTON LODGE ASYLUM, Gateshead.—Medical Superintendent.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House Surgeon. Board and residence provided.

EVANGELICAL PROTESTANT DEACONESSES' INSTITUTION AND HOSPITAL, Tottenham, N.—Junior House Surgeoncy. Salary £40, board, &c.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Physician. Salary £60 per annum, with board and lodging in the hospital.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary £100 per annum.

LUNATIC HOSPITAL, The Coppice, Nottingham.—Assistant Medical Officer for private patients. Unmarried. Salary £120 per annum with furnished apartments, board, washing, and attendance.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon for six months. Board, apartments, and washing provided.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road.—Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary £50 for the senior post.

PARISH OF ST. MARY, Stoke Newington.—Medical Officer of Health. Salary £300 per annum. Applications to the Clerk to the Vestry, Vestry Offices, 125, Church-street, N.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road.—Resident Medical Officer for one year. Salary £70 per annum, with furnished apartments and board.

ROYAL HOSPITAL FOR SICK CHILDREN—GLASGOW DISPENSARY.—Two extra Honorary Physicians and an extra Honorary Surgeon.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. At the expiration of that period a gratuity of £10 will be given if services found satisfactory.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon and Secretary. Salary £100, with board.

ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES, Northampton.—Junior Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Surgical Registrar for twelve months. Salary £40 per annum.

WEST RIDING ASYLUM, Menston, near Leeds.—Resident Clinical Assistant for six months. Board and residence provided.

Births, Marriages and Deaths.

BIRTHS.

BEALE.—On April 12th, prematurely, at Camberwell, the wife of Dr. A. A. Beale, of twin sons, both stillborn.

BERRY.—On April 10th, at Watford, the wife of F. Haycraft Berry, M.D., of a daughter.

BLOOD.—On April 14th, at Devonshire-road, Birkenhead, the wife of Surgeon-Major J. Blood, Bengal Army (retired), of a daughter.

BOISSIER.—On April 11th, at Banbury, Oxon., the wife of Arthur H. Boissier, L.R.C.P., M.R.C.S., of a son.

CHAWNER.—On April 12th, at Clay Cross, the wife of Alfred Chawner, L.R.C.P., M.R.C.S., of a son.

COOPER.—On April 17th, at Southwood, Birdhurst-road, South Croydon, the wife of H. J. Cooper, M.A., M.B., B.C. Cantab., M.R.C.S., &c., of a son.

FERRIS.—On April 13th, at Hurstlea, Uxbridge, the wife of John Spencer Ferris, M.B. Lond., of a daughter.

GOODALL.—On April 16th, the wife of Dr. E. W. Goodall, of the Eastern Hospital, Homerton, of a daughter.

KERR.—On April 13th, at Keelby, Brocklesby, Linca., the wife of D. Oliver Kerr, M.B., C.M., of a daughter.

MACNAMARA.—On April 10th, at Kilmallock, Ireland, the wife of P. J. Macnamara, M.D., F.R.C.S.I., of a son.

ROBERTS.—On April 13th, at Dashwood-road, Stroud-green, the wife of William Roberts, M.B., C.M., M.R.C.S., L.S.A., of a daughter.

MARRIAGES.

BADOCK—ANGELO.—On March 12th, at Rottnest Island, Western Australia, by the Rev. R. Hanlin, Arthur Badock, M.B., B.S., J.P., Medical Officer to the Ashburton District, Western Australia, second son of J. Barlow Badock, Esq., F.R.I.B.A., of Overcliff, Ulundi-road, Blackheath, to Violet Flora Emily, second daughter of Lieutenant-Colonel E. F. Angelo, late Royal Scots.

BATEMAN—ELLIOT.—On April 16th, at St. James's, Spanish-place, Marylebone, Marcus Yunge Bateman, of Folkestone, M.R.C.S. and D.P.H. Cantab., to Evelyn Gertrude, youngest surviving daughter of the late John Elliot, junr., of Teignmouth, South Devon.

BUSHBY—WIMBLE.—On April 17th, at Long Ditton, Surrey, Thomas Bushby, M.B., of Rodney-street, Liverpool, to Mary Bowring, daughter of Mrs. Wimble, of Oakleigh, Upper Long Ditton.

DAVIES—DUFFUS.—On April 12th, at Aberdeen, Howard A. Davies, M.B., B.S. Lond., of Cricklewood, N.W., to Jeanie, the third daughter of Alexander Duffus of Aberdeen.

REECE—PERKINS.—On April 18th, at Whitchurch, Edgware, by the Rev. J. C. Saunders, M.A., Chaplin of Downing College, Cambridge, assisted by the Rev. J. B. Norman, M.A., Rector of Whitchurch, Richard James Reece, M.D., only son of the late George Reece of Kensington, to Ada Eleanor, only child of J. Watt Perkins of Edgware.

STURROCK—WILSON.—On April 11th, at Bantaskin, Falkirk, John Frederick Sturrock, M.B., Broughty Ferry, to Agnes, only daughter of James Wilson, of Bantaskin.

DEATHS.

BECKETT.—On April 11th, at King's College Hospital, Henry Arnold Beckett, of Heathcote, Muswell-road, N., in his 63th year.

HASSALL.—On April 9th, at San Remo, Italy, Arthur Hill Hassall, M.D. Lond., M.R.C.P. Lond., aged 76.

LITTLE.—On March 15th, at Kuala, Lumpor, Dr. William Maxwell Little, of the Selangor Medical Service, aged 30.

MUMFORD.—On April 11th, at Eyston Hall, near Sudbury, Suffolk, William Lugar Mumford, M.D., of 12, Suffolk-street, Pall-mall, S.W., aged 53.

WAKEFIELD.—On April 12th, at Prince's-square, Surgeon-Colonel Henry Wakefield, late of the Bombay Medical Service, aged 65 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 19th, 1894.

	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
April 13	29·77	N.W.	51	47	102	64	46	..	Cloudy
,, 14	29·71	S.	53	49	71	55	47	..	Overcast
,, 15	29·81	S.W.	53	52	95	61	51	0·11	Cloudy
,, 16	29·39	S.W.	49	48	91	56	47	0·17	Raining
,, 17	29·50	S.W.	51	49	101	58	46	0·03	Cloudy
,, 18	29·63	S.E.	52	49	99	63	46	0·06	Hazy
,, 19	29·96	N.E.	48	47	62	49	44	0·01	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Great Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Great Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-sq. (2 P.M.), North West London (2 P.M.)

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY.—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Dr. Ernst Michels: A case of Extra-peritoneal Vesical Hernia (communicated by Mr. R. W. Parker).—Mr. J. Neville C. Davies-Colley: An Operation for the Cure of Cleft of the Hard and Soft Palate.

WEDNESDAY.—SOCIETY OF ARTS.—8 P.M. Mr. Chapman Jones: Some Recent Developments of Photographic Chemistry.

HUNTERIAN SOCIETY.—8.30 P.M. Discussion on Diphtheria. Dr. Newton Pitt: Etiology of Diphtheria.—Dr. Goodall: Clinical Relation to other Affections of the Throat and Occurrence as a Complication of Scarlet Fever and Measles.—Dr. Sidney Martin: Membranous Inflammations and the Characteristics of Diphtheria as a Disease (illustrated by lantern slides).—Dr. Washbourn: Facts bearing on Early Diagnosis, including the Employment of Bacterial Cultivation.—Dr. Hingston Fox: Mortality from Diphtheria contrasted with that from other Specific Fevers.—Dr. George Turner: Diphtheria and Sanitation. Dr. Thorne Thorne and Mr. St. Clair Shadwell have promised to speak.

THURSDAY.—SOCIETY OF ARTS.—4.30 P.M. Sir Auckland Colvin: Municipal and Village Water Supply and Sanitation in the North-West Provinces and Oudh.

FRIDAY.—CLINICAL SOCIETY OF LONDON.—Living Specimens at 8 P.M.:—Dr. Mott: Symmetrical Atrophy of the Hands.—Dr. Habershon: Amnesia with Right Hemiplegia in a young Hysterical Woman.—Dr. Rose Bradford: A case of Facial Hemiatrophy.—Dr. Hale White: A case of Muscular Dystrophy.—Mr. R. J. H. Scott: A case of Popliteal Aneurysm followed by Embolism of the Posterior Tibial Artery and Gangrene of the Foot.—Dr. Carr: An Unusual Form of Peripheral Neuritis.—Dr. Cayley: Multiple Cutaneous Fibrous Nodules associated with Rheumatism. Papers at 9 P.M.:—Mr. Barwell: A Mode of making Extension in Fractures of the Femur.—Dr. Lauder Brunton and Mr. Watson Cheyne: A case of Intestinal Obstruction due to Constriction of the Bowel after Appendicitis.—Mr. Silcock: A case of Acute Intestinal Obstruction and Peritonitis; Laparotomy; Incision and Drainage of Small Intestine above Obstruction; Cure.

LECTURES AND ADDRESSES.

MONDAY.—ROYAL METEOROLOGICAL SOCIETY AND THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8.30 P.M. Mr. G. J. Symons: Instruments and Observations and their Representation.

TUESDAY.—ROYAL INSTITUTION.—3 P.M. Prof. J. A. Fleming: Electric Illumination.

THURSDAY.—ROYAL INSTITUTION.—3 P.M. Prof. J. F. Bridge: Mozart as a Teacher (with musical illustrations)

ROYAL METEOROLOGICAL SOCIETY AND THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8.30 P.M. Dr. H. R. Mill: Temperature of Air, Soil, and Water.

FRIDAY.—ROYAL INSTITUTION.—9 P.M. Prof. H. Marshall Ward: Action of Light on Bacteria and Fungi.

SATURDAY.—ROYAL INSTITUTION.—3 P.M. Mr. H. D. Traill: Literature and Journalism.

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

"DRUGGISTS' COMMISSIONS TO MEDICAL MEN."

The editor of *Truth* is "told that it is a common practice for doctors to instruct chemists to keep particular proprietary articles, mineral waters, and patent medicines, and for the chemist to pay the doctor a commission upon all such goods sold on his prescription." The editor respectfully asks the authorities who preside over the medical profession whether this is so. We could wish that the vigilant editor had informed himself more fully on this matter before suggesting the prevalence of a practice so discreditable. The medical authorities have no special means of knowing of such practices. For ourselves, we do not believe that they are common or frequent. But if our contemporary will verify a few instances they will doubtless receive the attention of the authorities of the profession, as they would richly deserve to do.

Mr. Basilic Curwen.—Assuming the accuracy of the statement of our correspondent, Mr. Halliwell seems to have acted reasonably and with only due self-respect. It is right that his neighbour's seniority should be recognised, considering his standing in the neighbourhood and his long attachment to the hospital; but each medical man should have the opportunity of treating his own cases quite independently of the others.

Assistant.—It is not easy to define what is meant by "London." Probably a jury might consider the area covered by the London County Council as so meant. "Suburbs" may mean almost anything within a reasonable distance of the former limit.

Dr. J. W. Martin.—Our correspondent's question is not sufficiently definite to enable us to give him a definite reply.

Poet (Barcelona).—Ingenious, but hardly suitable to our columns.

"WHAT IS THE HYPODERMIC DOSE OF STRYCHNINE?"

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 31st last (page 810) Dr. Plummer, replying to a criticism on his case of chloral poisoning by Dr. Boyd which appeared in your previous issue, gives in his reply to the query, "What is the hypodermic dose of strychnine?" the dosage as three to four minims. This was the quantity given by me every twenty to thirty minutes for ten hours continuously in a recent similar case, with occasional injection of ether also and inhalation of amyl nitrite, both of which were in use for an hour and more before the strychnine was tried, and with little apparent effect. Improvement soon followed the use of strychnine, of which a total amount of nine-tenths of a grain

was administered, and the patient, who had swallowed in a single dose a solid ounce of pure chloral in saturated solution, was out of danger in ten hours from the commencement of this treatment. In the same issue I see a case of tetanus successfully treated. I had in 1884 a case where the use of chloral was similarly successful. The patient was a tall, muscular, healthy man aged thirty-five, a railway inspector, on whom I had operated for hæmorrhoids, during which operation he as nearly as possible died under the anæsthetic—chloroform. About a week after the operation, when the bowel had almost healed, he began to have a stiffness in the jaw and difficulty in swallowing, and in a day or two later he was a classical picture of the tetanic state. Like Dr. Plummer, I had also tried opium in the form of morphia, hypodermically, with no effect, and then substituted for this chloral hydrate, fifteen grains, with ammonia bromide, twenty grains, every three hours. At first he could swallow fairly well, but the spasm excited by the act became so acute that I was at a loss what to do, but conceived the plan of getting him to inhale a little chloroform, immediately upon which he could swallow easily, although slowly. The plan answered very well, but in attempting to leave it off a fortnight later there was such a recrudescence of the bad symptoms that it had to be continued for another week, the man ultimately and entirely recovering.

I am, Sirs, yours faithfully,

ROBERT J. COLENSO, M.B. Oxon.

Cromwell-road, S.W., April 16th, 1894.

Quid pro Quo.—Doubtless the occurrence of two accidents to the same individual within sixteen months gave rise to the idea among the directors that the sufferer contributed to his mishaps by his own carelessness. But the proceeding as narrated by our correspondent appears to us unusual and arbitrary.

Dr. James Farquharson.—The offices of the society are at 20, Hanover-square, London. References to the subject will be found at pages 164 and 217 of vol. i. of THE LANCET, 1893.

HYPERPYREXIA AFTER OPERATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly find space for the insertion in THE LANCET of the following experience which occurred to us in the course of our practice the other day, as we should much like some opinion and explanation of the circumstance. The case was one of tertiary syphilis in a woman aged forty-three, the disease being of fourteen years' standing. There were large areas of irregular ulcerations on the right leg, thickly crusted with scabs of a rupial character. When first seen the patient presented symptoms of septicæmia; the leg improved under local treatment, but in the course of three weeks an abscess pointed in the middle third of the thigh; this was opened under chloroform. Before the operation the temperature was 100·2° F. She took the anæsthetic well; after dressing the wound her temperature was taken, under the tongue, and the thermometer registered 108·2°. We both examined the thermometers, and then took the temperature again, placing one thermometer under the tongue and the one we had first used in the axilla; the thermometers then showed 99·3° and 99° respectively. How is this hyperpyrexia and sudden fall to be accounted for The thermometer used was an almost new one of Lynch's make, half minute magnifier, certified at Kew; and testing it since with other thermometers it has always agreed.

We are, Sirs, yours truly,

F. W. TOMS.

London, E.C., April 17th, 1894. H. ATHILL CRUTTWELL.

"BICHROMATE OF POTASSIUM AS A REMEDY IN GASTRIC AFFECTIONS."

To the Editors of THE LANCET.

SIRS,—In his paper with the above title communicated to the Eleventh International Medical Congress, and published in your last issue, Professor Fraser mentions the name of Drysdale as one of his authorities, but he gives no reference. With your leave I will supply the omission. Whatever Vulpian may have published in 1883, the authority for the therapeutic use of bichromate of potassium in gastric and other affections is the monograph by the late Dr. John J. Drysdale of Liverpool, first published in 1851 as part of the "Hahnemann Materia Medica," a revised edition appearing in the "Materia Medica, Physiological and Applied," published by Trübner and Co. in 1884. Readers of this work will find that bichromate of potassium (or *kali bichromicum*, as it is called by homœopathists) has produced in poisonings and in experiments on the healthy (or "provings") all the symptoms and conditions which were cured by the drug in Professor Fraser's patients. It is not to Vulpian, but to Drysdale, that Professor Fraser owes this knowledge, and to the friends of Drysdale who joined him in the research—testing the drug on their own healthy bodies to discover the indications for its use in disease. I am, Sirs, yours truly,

Clarges-street, W., April 14th, 1894. JOHN H. CLARKE.

*** We insert the above letter as it involves a question of priority in the use of bichromate of potassium as an internal remedy; but we do not intend thereby to open our columns to the advocacy of the peculiar tenets of homœopathy.—ED. L.

MEDICAL POPULATION AND TRAINING IN JAPAN.

PROFESSOR OGATA of Tokio, Japan, has contributed to the *Deutsche Medicinische Wochenschrift* some interesting details on the study and practice of medicine in that country. Originally all the professorships of the reformed medical faculty in Tokio were filled by Germans; but gradually a new race of Japanese scientific men has been brought up, who now fill these places, leaving there only two German physicians—Baelz and Scriba—who now teach in Japan. Two courses of practical instruction have been instituted. One lasts a year and is meant for special instruction. The other, still shorter, is used for medical officers, who receive instruction in hygiene, medical law, State medicine, and lunacy. Besides the University in Tokio there are six medical schools in the provinces, supported partly by the towns, partly by the Government. Private hospitals are very numerous, not reckoning the military hospitals. At the last Census in 1889 there were 41,305 medical practitioners in Japan, of whom the fourth part had received a European scientific education. The remaining portion studied Chinese, having as well some knowledge of European medicine. On an average there are twelve medical practitioners to every 10,000 inhabitants in Japan. Thirteen years ago a diploma of capacity was given to every practising physician, but after that time an examination was required before a man could practice. These examinations are carried on as in Germany; a preparatory and Government examination are required. The candidates for examination in Tokio, Nagasaki, and Kioto are extremely numerous: they number annually from 5000 to 6000; but scarcely a tenth part of the number succeed. Almost all Japanese physicians are at the same time apothecaries and dispense their own medicines. In practice the exhibition of medicines is the principal thing. People of the higher ranks only employ very celebrated physicians.

A Medical Freemason.—Elias Ashmole, the celebrated antiquary, records in his diary: "1646. Oct. 16, 4.30 P.M., I was made a Free-Mason at Warrington in Lancashire, with Coll. Henry Mainwaring of Karincham in Cheshire." A still earlier initiation on English soil, however, took place at Newcastle on May 20th, 1641, when the Quartermaster-General of the Scottish army, Sir Robert Moray (Murray), afterwards the first President of the Royal Society, was admitted to membership in the Lodge of Edinburgh by a travelling section of that body. Moray's next attendance is recorded under July 27th, 1647, when he was present at a meeting of the same lodge in Edinburgh on the occasion of the admission of "William Maxwell, docter off fisick."

E. M.—Our correspondent should communicate directly with the authorities of the Canadian Medical Schools, and address his question to the Secretary or the Dean.

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I am, Sirs, yours faithfully,

Northampton-terrace, Swansea, April 17th, 1894. W. F. BROOK.

COMMUNICATIONS not noticed in our present issue shall receive attention in our next.

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